RESULTS OF SITE OFFEROR PROPOSAL EVALUATION

JULY 21, 2006

Submitted To:

U.S. Department of Energy

Submitted By:

FutureGen ALLIANCE

1875 I Street, N.W., 5th floor
Washington, D.C. 20006

Acknowledgment: This material is based upon work supported by the Department of Energy under Award Number DE-FC26-06NT42073.

FUTUREGEN INDUSTRIAL ALLIANCE
1875 I STREET, N.W., 5TH FLOOR
WASHINGTON, D.C. 20006
202-429-8430
Email: info@FutureGenAlliance.org
Homepage: www.FutureGenAlliance.org

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

CO_2	carbon dioxide
DOE	U.S. Department of Energy
EOR	enhanced oil recovery
EPA	U.S. Environmental Protection Agency
LBNL	Lawrence Berkeley National Laboratory
mg/L	milligrams per liter
MMT	million metric ton
NEPA	National Environmental Policy Act
PAA	Public Access Area
RFP	Request for Proposal
TEG	Technical Experts Group
TDS	total dissolved solid
USDW	underground source of drinking water

REPORT TO THE U.S. DEPARTMENT OF ENERGY

RESULTS OF SITE OFFEROR PROPOSAL EVALUATION

JULY 21, 2006

1.0 INTRODUCTION

FutureGen is a government-industry cost-shared project to design, build, and operate a first-of-a-kind coal-fueled, near-zero emission power plant. The FutureGen power plant will produce electricity and hydrogen from coal while capturing and permanently storing carbon dioxide (CO_2) in a deep geologic formation. The nominal 275-megawatt prototype plant will operate as a production plant, generating commercially significant levels of electric power. It will also provide a large-scale engineering laboratory for testing new and clean power generation, CO_2 capture, and coal-to-hydrogen technologies, and will include process slip-stream access for testing and developing new technologies. The FutureGen program intends to build and operate the cleanest coal-fueled power plant in the world.

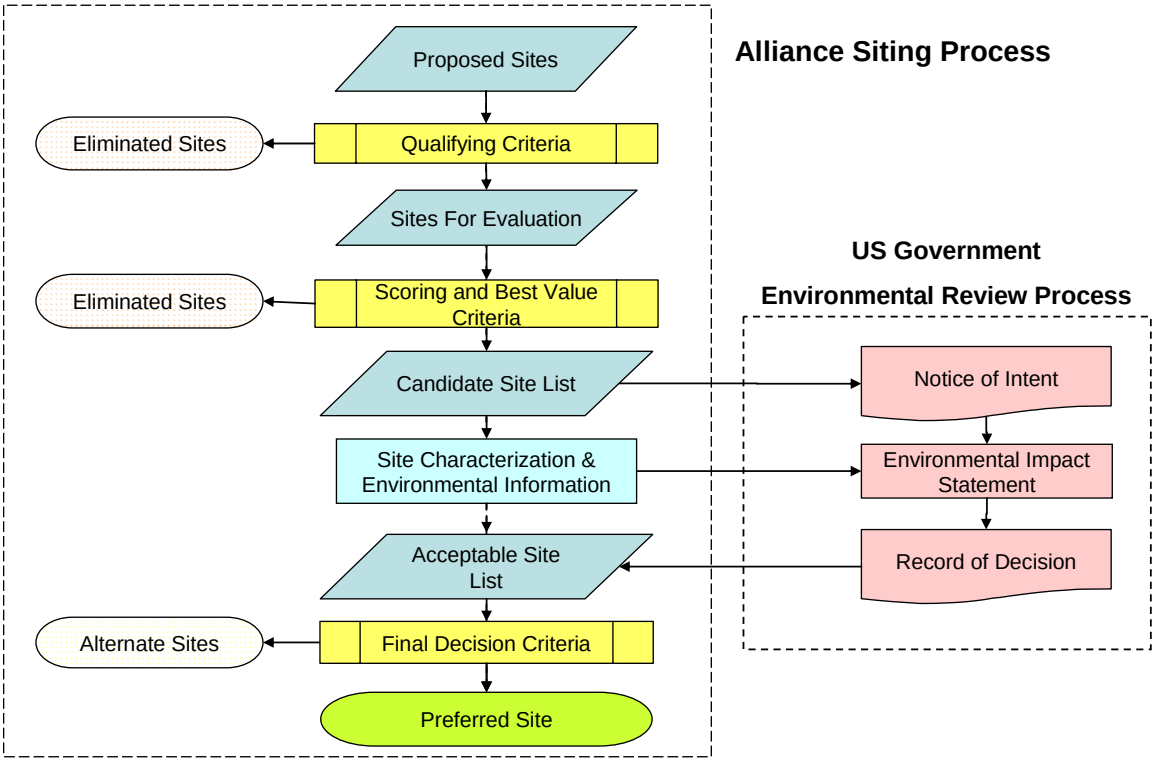
Many aspects of the FutureGen plant will employ cutting-edge technology. Rather than using traditional coal combustion technology, the plant will be based on the coal gasification process in which the coal's carbon is converted to a "synthesis gas" made up primarily of hydrogen and carbon monoxide. Advanced technology will be used to react the synthesis gas with steam to produce additional hydrogen and separate out a concentrated CO_2 gas stream from the synthesis gas. Other undesirable impurities will be removed during the process. The hydrogen could be used as a clean fuel for electric power generation in turbines, fuel cells, hybrid combinations of these technologies, or other commercial uses.

The separated CO_2 stream will be permanently stored in one or more subsurface geologic formations. This process is commonly referred to as geologic sequestration or geologic storage. Candidate geologic formation(s) will include deep saline formations (which are the most prevalent type of reservoir both in the United States and worldwide) and could also include depleted oil and gas reservoirs, unmineable coal seams, and other geologic formations. The target formation(s) will be intensively monitored to verify the permanence of CO_2 storage and increase the world's scientific understanding of CO_2 storage in geologic formations. Varying compositions of the injected CO_2 stream are possible, with the final composition driven by the final facility design.

On December 2, 2005, the U.S. Department of Energy (DOE) entered into a cooperative agreement with the FutureGen Industrial Alliance, Inc. (Alliance) to begin the site selection process and prepare a conceptual design for the facility. This report details the process developed and implemented by the Alliance to identify candidate sites for the proposed FutureGen facility. This process involved developing siting criteria, issuing a Request for Proposals (RFP), and evaluating proposals received, including a visit to each proposed site.

This site identification process has resulted in the creation of a Candidate Site List. This list, and supporting rationale, is being submitted to DOE for inclusion, as DOE deems appropriate, into the agency's National Environmental Policy Act (NEPA) compliance process. Figure 1 is a schematic showing the Alliance siting process and its connection with DOE's NEPA process.

Figure 1. Alliance Siting Process, with DOE's NEPA Compliance Process



2.0 SITING CRITERIA

Beginning in December 2005, the Alliance Siting Team developed a series of criteria for use in determining sites that should be considered for the FutureGen facility. The criteria focused on the goals and objectives for FutureGen, including the need to demonstrate expeditiously a viable technology for CO_2 capture and storage in order to address an issue of national and international importance. The criteria were established to identify and avoid potential technical, engineering, and environmental challenges that could adversely affect the success of or schedule for the project.

Three types of criteria were developed: qualifying criteria (criteria that each site would have to meet in order to be considered further), scoring criteria (criteria that would allow sites to be ranked based on the extent to which they possessed desirable features), and best value criteria (criteria that were not capable of being quantitatively scored but that represented factors the Alliance needs to consider to secure a site that can fulfill the project's mission). Criteria for both power plant (surface) and geologic storage (subsurface) components were developed and later revised based on comments from outside power plant siting and carbon sequestration/geologic storage experts. The Alliance also sought, received, and considered input from outside

stakeholders, including regulatory agencies and environmental groups, through selected interviews and as a result of a formal public comment period (see Section 3 for details on the public comment period). The criteria, along with the rationale for each criterion and the scales and weights used for the scoring criteria, are in Attachment 1.

3.0 REQUEST FOR PROPOSALS

The qualifying, scoring, and best value criteria were included in a draft RFP that was posted to the FutureGen website (www.FutureGenAlliance.org) on February 14, 2006 for public review and comment. The Alliance accepted comments regarding the draft RFP until February 28, 2006. Responses to the comments received were posted to the website.

The final RFP, revised in accordance with comments received and other considerations, was posted to the FutureGen website on March 7, 2006. The Alliance accepted clarifying questions regarding the final RFP until March 16, 2006. Responses to questions received were posted to the website and, in response to the clarifying questions, minor amendments to the final RFP were posted to the website on March 20 and 24, 2006. The final RFP stated that the deadline for proposal submittals was May 4, 2006.[1]

4.0 PROPOSALS RECEIVED

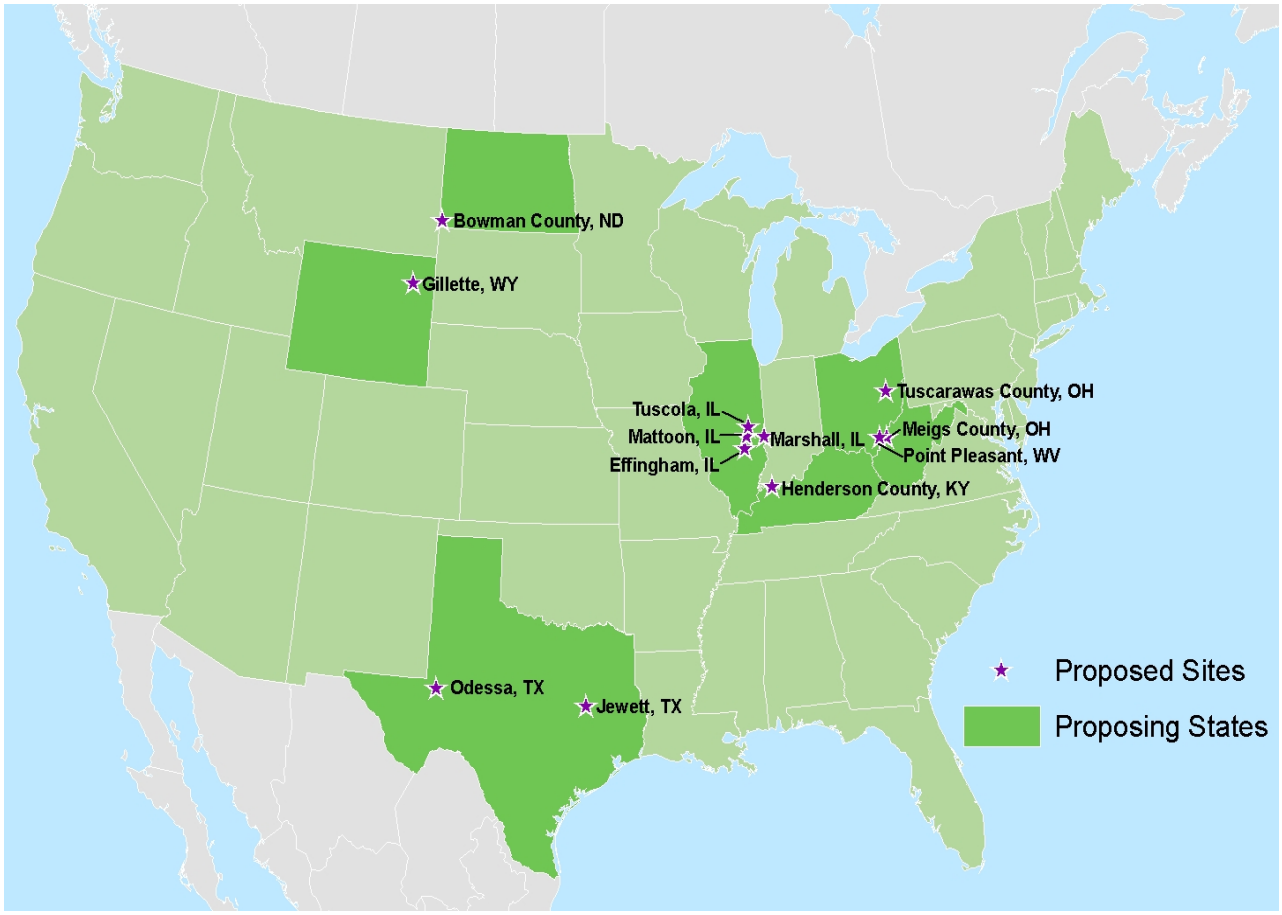
Twelve proposals from seven states were received by the deadline. The following sites were proposed:

- Illinois - Effingham-North 45
- Illinois - Marshall-Forsythe
- Illinois - Mattoon-Dole
- Illinois - Tuscola-Pflum
- Kentucky - Henderson County
- North Dakota - Team ND FutureGen
- Ohio - Meigs County
- Ohio - Tuscarawas County
- Texas - Heart of Brazos
- Texas - Odessa
- West Virginia - Lakin Property
- Wyoming - Wyoming FutureGen Host Site

Figure 2 shows the locations of the proposed sites.

[1] The final RFP also required potential site offerors to submit a notice of intent to submit a proposal, and the number of sites that would be proposed, by March 24, 2006. After that date, the Alliance extended the notice period until April 7, 2006 at the request of a potential offeror. A potential offeror who submitted a notice on April 10, 2006 was informed that a proposal from that entity would not be accepted in fairness to other site offerors who had met the notice requirement.

Figure 2. Map of Offered Sites



5.0 PROPOSAL EVALUATION

The Alliance Siting Team created two Proposal Evaluation Teams: one for the evaluation of criteria relating to the power plant and one for the evaluation of criteria relating to geologic storage. Both evaluation teams were supported by outside experts.

5.1 Qualifying Criteria Review

The evaluation teams carefully examined each proposal to assess compliance with qualifying criteria. This review resulted in the generation of clarifying questions for each of the site offerors. The questions were submitted to individual offerors on May 18, 2006 by electronic mail. All offerors submitted their responses by the deadline on May 24, 2006 (the original deadline of May 23 was extended by one day at the request of one offeror).

Following the review of the responses to questions, as well as the original proposals, the site evaluation teams determined that four sites did not satisfy all of the qualifying criteria. This conclusion was reviewed with the Alliance Board of Directors during conference calls on May 24 and May 30, 2006. After thorough discussions, the Board concurred with the evaluation

team's conclusions and voted to exclude the four sites from further consideration in the proposal evaluation process.

The four sites that did not meet all of the qualifying criteria are:

- North Dakota - Team ND FutureGen (Qualifying Criterion 1.3.6)
- Ohio - Meigs County (Qualifying Criteria 2.6.1 and 2.6.3)
- West Virginia - Lakin Property (Qualifying Criteria 1.1.2, 2.6.1, and 2.6.3)
- Wyoming - Wyoming FutureGen Host Site (Qualifying Criteria 2.3.1 and 2.3.2)

5.1.1 North Dakota – Team ND FutureGen

The Proposal Evaluation Team determined that the North Dakota site did not meet the requirements of Qualifying Criterion 1.3.6, Proximity to Class I Visibility Areas. This criterion states that the

> "...proposed power plant site must be located at least 60 miles (100 kilometers) beyond the boundaries of any Mandatory Class I Visibility Area." Qualifying Criterion 1.3.6.

The North Dakota proposal states that the offered site is within 52 miles (83 kilometers) of the Teddy Roosevelt National Park, a Class I visibility area.

The rationale for this qualifying criterion is that the Alliance seeks to minimize or avoid environmental impacts. In addition, avoidance of Class I visibility areas and other protected resources provides the least risk to project cost and schedule, and thus to project mission. The 60-mile (100-kilometer) distance was selected based on "Prevention of Significant Deterioration" guidance that requires additional scrutiny for the siting of a new source of air pollutant emissions within 100 kilometers of a Class I visibility area[2], and on Standard Industry Practice. Although the proposed FutureGen facility will be designed to be the cleanest coal-fueled power plant in the world, it will be the source of some minimal air emissions, at least during startup(s). For this reason, the Alliance included the 60-mile (100-kilometer) limitation in the criterion. It is important to note that no potential site offeror questioned the inclusion of this criterion in the RFP during the draft RFP comment period.

The North Dakota proposal includes a letter from the North Dakota Department of Health stating that it would be possible to obtain a permit for a power plant located within 60 miles of a Class I Visibility Area. Although it is possible that a FutureGen facility located on the North Dakota site could obtain the necessary air quality permits, it is a risk and potential schedule delay that the Alliance sought to avoid by including the criterion in the RFP. Because the North Dakota proposal did not satisfy Qualifying Criterion 1.3.6, and in fairness to other potential site offerors, the Alliance eliminated this site from further consideration.

[2] The Prevention of Significant Deterioration program provides that permits may not be issued to a major new facility if federal land managers, such as at the National Park Service, allege that the facility's emissions "may cause or contribute to a change in the air quality" in a Class I area (42 U.S.C. §7475).

5.1.2 Ohio – Meigs County

The Proposal Evaluation Team determined that the Ohio-Meigs County site did not meet the requirements of Qualifying Criteria 2.6.1, Public Access Areas, and 2.6.3, Sensitive Features.

As stated in the RFP,

> "The land above the proposed target formation(s) must not be on a PAA [Public Access Area]. The bottomhole location of any injection well must be no closer than 10 miles (16 kilometers) from any PAA. Based on the professional judgment of technical experts, the Alliance believes that a 50-MMT CO_2 plume would have a very low probability of migrating up to 10 miles (16 kilometers) from the bottomhole of an injection well. Because this is a first-of-a-kind demonstration project, 10 miles was chosen as a conservative safe distance." Qualifying Criterion 2.6.1.

The RFP defines a PAA as "a state park or national park or preserve, national monument, national seashore, national lakeshore, national wildlife refuge, designated wilderness area, designated wild and scenic river, or study area for any of the preceding designations" (see RFP page 14, as amended).

Further, the RFP states that:

> "The land above the proposed target formation(s) must not intersect large dams, water reservoirs, hazardous materials storage facilities, Class I injection wells, or other sensitive features. The bottomhole location of any injection well must be no closer than 10 miles (16 kilometers) to any sensitive feature. Based on the professional judgment of technical experts, the Alliance believes that a 50-million-metric-ton (MMT) CO_2 plume would have a very low probability of migrating up to 10 miles (16 kilometers) from the bottomhole of an injection well. Because this is a first-of-a-kind demonstration project, 10 miles was chosen as a conservative safe distance." Qualifying Criterion 2.6.3.

The RFP defines a sensitive feature as "a large dam, water reservoir, hazardous materials storage facility, or Class I injection well" (see RFP page 14). A large dam was later defined as "any dam of 15 meters (50 feet) or more in height or a dam greater than 5 meters (16 feet) high and having a reservoir volume of more than 3 million cubic meters (4 million cubic yards)" (RFP Amendment, dated March 20, 2006).

This criterion reflects the Alliance's concern about schedule delays and possible budget impacts for extensive and complex seismic analysis required to address concerns regarding potential adverse impacts to large dams. Siting the injection field near a large dam would incur schedule and budget risk – and potentially jeopardize the mission of the project – should challenges arise to address safety issues surrounding dam integrity for an unexpected injection-related earthquake.

The proposed injection field for the site extends to the north closer than the 10-mile limit to a PAA (Forked Run State Park) as specified in Qualifying Criterion 2.6.1. In response to a

clarifying question from the Alliance, the site offeror modified its proposal by changing the layout of the CO_2 injection wells "to maintain a minimum of 10 miles distance from the Forked Run State Park."

Independent calculations verified that the new well layout maintained at least 10 miles from Forked Run State Park. However, only two of the 12 newly proposed wells were found to meet the requirements of both Qualifying Criteria 2.6.1 and 2.6.3, and these two are indicated as secondary wells. The other 10 wells are within 10 miles of either the Ohio River Islands National Wildlife Refuge or Racine Locks and Dam. The Ohio River Islands National Wildlife Refuge is a PAA as defined in the RFP. In addition, using Army Corps of Engineers' data, the Alliance conservatively estimated the reservoir volume of the Racine Locks and Dam at over 44 million cubic meters. This meets the definition of a large dam and is a "sensitive feature" as defined in the RFP. For these reasons, the Alliance determined that the Ohio-Meigs County site did not satisfy all of the qualifying criteria and eliminated this site from further consideration.

5.1.3 West Virginia – Lakin Property

The Proposal Evaluation Team determined that the West Virginia site did not meet the requirements of Qualifying Criteria 1.1.2, Size; 2.6.1, Public Access Areas; and 2.6.3, Sensitive Features.

With respect to size, the RFP states that:

> "The area and linear dimensions of the proposed power plant site must accommodate the FutureGen power plant and associated facilities. The proposed site must not be less than 200 contiguous acres. The Alliance has based this acreage on the area required for typical power plants, while taking into account FutureGen's need for additional space for multiple coal piles, research facilities, and carbon capture facilities." Qualifying Criterion 1.1.2.

In response to a public question on the draft RFP regarding whether an improved road traversing a site would violate the definition of "contiguous" in Criterion 1.1.2, the Alliance stated that "A public access road traversing the proposed site would be unacceptable to the Alliance because of site security concerns and the potential to disrupt operations, unless the road is located on a portion of the site that would not interfere with the secure construction or operation of the site. In addition, any costs associated with relocation of improved roads would be the responsibility of the offeror."

Included in the site proposal is an aerial photograph showing the outline of the proposed 203-acre Lakin Property site. This acreage is bisected by West Virginia Route 62 (in both its current location and the proposed relocation) and the CSX Railroad. The site offeror has not provided a site of 200 contiguous acres. For this reason, the Alliance Proposal Evaluation Team determined that the West Virginia site did not satisfy all of the qualifying criteria and eliminated this site from further consideration.

In addition, the West Virginia proposal states that that one state park and one national wildlife refuge (Ohio River Islands National Wildlife Refuge) are located within 10 miles (16 kilometers) of the proposed injection well bottomhole location. The proposal notes that the state park is a "day-use monument site, not a resort state park." However, the RFP definition of a PAA (provided above) makes no distinction between day-use and resort state parks. For this reason, the Alliance determined that the West Virginia site did not satisfy all of the qualifying criteria and eliminated this site from further consideration.

Further, the West Virginia proposal states that that "The Racine Locks and Dam on the Ohio River are located 9.383 miles east of the proposed site." In response to the Alliance's clarifying question, the site offeror stated that:

> "Racine Locks & Dam is a navigation dam, which maintains a navigation pool with a 9-foot channel in the middle of the Ohio River, and is owned and operated by the Huntington District Corps of Engineers. It meets the reservoir capacity noted in Section 2.6.3. It is a non-navigable, high-lift, gated dam, top length of 1,173'. Eight tainter gates, clear span 110' between 15' intermediate piers and 16' end piers, damming height 32' above sills, clearance above maximum high water when fully raised approximately 5'. The gates provide a damming height of 37 feet. The hydropower unit is completed."

Thus, the Racine Locks and Dam is a "sensitive feature" as defined in the RFP. For this reason, the Alliance determined that the West Virginia site did not satisfy all of the qualifying criteria and eliminated this site from further consideration.

5.1.4 Wyoming – Wyoming FutureGen Host Site

The Proposal Evaluation Team determined that the Wyoming site did not meet the requirements of Qualifying Criteria 2.3.1, Total Dissolved Solids or Maximum Concentration Levels, and 2.3.2, Water Resource Usage.

The RFP states that

> "Proposed target formation(s) must not be an underground source of drinking water." Qualifying Criterion 2.3.1.

The primary target formation identified in the Wyoming proposal is the Madison Limestone formation. The Wyoming proposal states that:

> "The Madison Limestone underlies the proposed FutureGen site at a depth of approximately 9,500 feet, and contains water with a total dissolved solids (TDS) concentration of approximately 5,000 milligrams per liter (mg/L)."

Thus, according to the Wyoming proposal, the proposed Madison formation meets the definition of an underground source of drinking water (USDW) because it was specified as having fewer than 10,000 mg/L TDS (see RFP, page 14). Because the information provided by the site offeror

indicated an unequivocal violation of this criterion, the Alliance Proposal Evaluation Team posed a clarifying question to the offeror.

In response to the question, Wyoming states that "...the groundwater quality of the Madison Limestone underlying the proposed site and the surrounding area is currently unknown." It also states that values may range from 5,000 to 20,000 mg/L. Wyoming further claims a USDW exemption, which can be granted by the State, and states that

> "In this case, the [Wyoming Department of Environmental Quality] believes it reasonable to exempt the Madison Limestone within the area of the proposed FutureGen site...."

The Proposal Evaluation Team, including outside carbon sequestration/geologic storage experts, believes that lack of knowledge about the TDS level at the site is not sufficient grounds to conclude that Wyoming has met this criterion or to exempt Wyoming from satisfying this criterion. Further, no documentation was provided from the Wyoming Department of Environmental Quality granting a USDW exemption for the Madison formation. No alternative injection scheme was provided that would have eliminated the Madison formation as an injection target. The Alliance, based on the preponderance of the evidence and in fairness to other site offerors and potential site offerors, determined that Wyoming did not meet this qualifying criterion and eliminated this site from further consideration.

With respect to water resource usage, the RFP states that:

> "The broad definition of an underground source of drinking water was mandated by Congress to ensure that future underground sources of drinking water would be protected, even where those aquifers are not currently being utilized as a drinking water source or could not be used without some form of water treatment." Qualifying Criterion 2.3.2.

As evidence, the RFP asked site offerors to:

> "Provide evidence that the proposed target formation(s) is not a potential source of drinking water. In addition, identify water resources listed by the local water board that will be used to meet local water usage needs for the next 10 years." Qualifying Criterion 2.3.2.

The Wyoming site proposal states that:

> "Under the current master plan for the City of Gillette and vicinity in Campbell County, the city is expected to complete additional public drinking water supply wells into the Madison Limestone in the vicinity of their existing Madison well field, which is located approximately 25 miles northeast of the proposed FutureGen site (section 6, T51N, R66W, Crook County, Wyoming)."

Wyoming states that the 25-mile distance of future Gillette Madison water supply wells from the proposed FutureGen site is beyond the 10-mile radius for potential influence of CO_2 injection into the Madison Limestone at the proposed FutureGen site. However, the RFP did not specify a

distance requirement applicable to Qualifying Criterion 2.3.2. Extraction of drinking water from the same formation planned for CO_2 injection demonstrates that Qualifying Criterion 2.3.2 would not be met. For this reason, a clarifying question was submitted to Wyoming.

Wyoming provided a complex argument in its clarifying documentation to support meeting the intent of this criterion. The core of the argument is that lithologic transitions occur up-dip of the injection site and provide seals for migration to shallower depths where drinking water is to be extracted. The argument is made by inference with respect to known structures in the region, but no direct evidence is provided in the proposal regarding the proposed well site and no indication is given that data was available within 10 miles of the proposed site, as required in other qualifying criteria. In addition, no supporting evidence is provided, especially with regard to continuity of the lateral seals.

The Proposal Evaluation Team, including outside carbon sequestration/geologic storage experts, believes that the site offeror has not met this criterion because (1) no evidence is provided on the presence of the lateral seals to prevent up-dip migration of the CO_2 to where water is acknowledged to be extracted 25 miles away, and (2) no evidence is provided on the lateral continuity of these seals. The Alliance, based on the preponderance of the evidence and in fairness to other site offerors and potential site offerors, determined that Wyoming did not meet this qualifying criterion and eliminated this site from further consideration.

5.2 Scoring Criteria Review

The power plant and geologic storage evaluation teams then turned their attention to the scoring criteria for the eight sites that had met all qualifying criteria (qualifying sites). Each team member individually scored each proposal, using the scales that had been determined in advance of the receipt of the proposals (shown in Attachment 1). Each team then conferred and identified areas of difference for further discussion and resolution.

From June 6-8, 2006, all members of the Proposal Evaluation Team, including the outside technical experts, met in Richland, Washington, for an internal workshop, with members of the Alliance Technical Committee observing. During this meeting, one set of questions for one site offeror (Illinois-Marshall) was developed and submitted, and a response was received by the June 12, 2006 deadline set by the Alliance.[3]

Using specially developed worksheets, the scores for each site were generated and a final score was derived for each scoring criterion for each site. This resulted in a ranked list of sites for the power plant and a ranked list of sites for geologic storage. These lists were combined to develop a ranked list of qualified sites. The summaries for this scoring process are in Attachment 2. Note that the maximum possible score is 1,305 (where all scores are a 5); the minimum score is 261 (where all scores are a 1).

[3] In response to the initial clarifying questions, Illinois-Marshall proposed a modified injection well field from what was originally proposed; additional information was requested in order to assign scores to the substitute injection well field.

5.3 Site Visits

After reviewing the proposals and responses to questions, the Alliance sent a three-person team to visit all 12 proposed sites. The site visit team was not aware of whether a site had qualified or failed to qualify prior their visits. The site visits were conducted from May 14 through June 5, 2006. Table 1 shows the dates each site was visited, and the people with whom the site visit team met.

Table 1. Site Visits

Site	Date Visited	Site Contacts
Texas – Heart of Brazos	May 14, 2006	▪ Scott Tinker: Director, Texas Bureau of Economic Geology ▪ Jay Kipper: Plant Site Infrastructure ▪ Jerry Hill: Proposal Coordinator, FutureGen Texas ▪ Steve Walden: Permitting and Environment ▪ Joel Trouart: Vice President, Westmoreland Mining, Plant Site Host ▪ Jay Barrow: Injection Site Host
Texas - Odessa	May 15, 2006	▪ Scott Tinker: Director, Texas Bureau of Economic Geology ▪ Jay Kipper: Plant Site Infrastructure ▪ Jerry Hill: Proposal Coordinator, FutureGen Texas ▪ Steve Walden: Permitting and Environment ▪ Gary Haner: Plant Site Host ▪ Richard Brantley: University of Texas Lands Office, Injection Site Host
Wyoming	May 17, 2006	▪ Rob Hurless: Office of the Governor, Energy and Telecom Advisor ▪ Steve Waddington: Executive Director, Wyoming Infrastructure Authority ▪ Bryan Hassler: Executive Director, Wyoming Pipeline Authority ▪ Ronald Surdam: Director, Wyoming State Geological Survey
Kentucky	May 19, 2006	▪ Andrew McNeill: Acting Executive Director, Office of Energy Policy ▪ Talina Mathews: Project Manager, Office of Energy Policy ▪ Robert Amato: Deputy Executive Director, Kentucky Public Service Commission ▪ J. Steven Gardner: President/CEO, Environmental Consulting Services Inc. ▪ David Schwartz: Erora Group, Site Partner/Owner
Illinois-Tuscola	May 20, 2006	▪ Bill Hoback: Office of Coal Development, Illinois Dept. of Commerce and Economic Development Opportunity ▪ Ronald Swager: Project Support Specialist, Patrick Engineering, Inc. ▪ Brian Moody: Executive Director, Tuscola Economic Development ▪ Polly Wise: Coal Information Coordinator, Commerce and Economic Development ▪ James Crane: Tuscola County Engineer

Table 1. Site Visits (continued)

Site	Date Visited	Site Contacts
Illinois-Mattoon	May 20, 2006	▪ Bill Hoback: Office of Coal Development, Illinois Dept. of Commerce and Economic Development Opportunity ▪ Ronald Swager: Project Support Specialist, Patrick Engineering, Inc. ▪ Angela Griffin: President, Coles Together ▪ David Wortman: City Engineer & Director of Public Works, City of Mattoon
Illinois-Effingham	May 21, 2006	▪ Bill Hoback: Office of Coal Development, Illinois Dept. of Commerce and Economic Opportunity ▪ Ronald Swager: Project Support Specialist, Patrick Engineering, Inc. ▪ Todd Hull: Economic Development Director, City of Effingham ▪ Matthew Hortenstine; Attorney-at-Law, Taylor Law Offices, Effingham ▪ Steve Miller: City Engineer, City of Effingham
Illinois-Marshall	May 22, 2006	▪ Bill Hoback: Office of Coal Development, Illinois Dept. of Commerce and Economic Opportunity ▪ Ronald Swager: Project Support Specialist, Patrick Engineering, Inc. ▪ Julie Bounds: Economic Development Director, City of Marshall ▪ Robert Colvin: Partner, Francis Associates Consulting Engineers
Ohio-Tuscarawas County	May 30, 2006	▪ Heinz Stucki: Tuscarawas Co. Community Improvement Corp. ▪ Ed Lee: FutureGen Project Committee Chair ▪ Greg Kimble: FutureGen Project Committee Member ▪ Brian Harootyan: Project Specialist, ENSR, Cincinnati
Ohio-Meigs County	May 31, 2006	▪ Perry Varnadoe: Director, Meigs Co. Office of Economic and Workforce Development ▪ Thomas Zimmermann: Project Manager, WorleyParsons, Westchester, IL ▪ Brian Harootyan: Project Specialist, ENSR, Cincinnati
West Virginia	June 1, 2006	▪ Alex McLaughlin, Director, West Virginia Development Office, Business and Industrial Development ▪ John Herholdt, Energy Efficiency Program Manager. West Virginia Development Office ▪ Woody Thrasher, President, Thrasher Engineering, Charleston, WV ▪ John Musgrave, Mt. Pleasant, WV
North Dakota	June 5, 2006	▪ Karlene Fine: Executive Director, North Dakota Industrial Commission ▪ Tom Durham: Westmoreland Coal Company ▪ Dave Welge: Westmoreland Power Inc. ▪ Mike Jones, Energy and Environmental Research Center

The site visit team made the following inquiries regarding each proposed site during the site visit:

- Size/Shape
- Topography
- Elevation
- Existing Site Hazards
- Existing Land Use
- Floodplains
- Wetlands
- Access to Cooling Water
- Volume of Water Available
- Water Adequacy Under Low Flow Conditions

- Distance to Cooling Water
- Coal Supply Environment/Delivery Mode Flexibility
- Road Access
- Distance to Rail/Barge Delivery
- Access to Natural Gas Pipeline
- Cultural Resources
- Proximity to Public Access Areas
- Proximity to Tribal Lands
- Air Dispersion
- Grid Proximity
- Voltage
- Rights-of-Way
- Proximity to Proposed Target Formation(s)
- Physical Access to Area above Geologic Storage (e.g., roads)
- Presence of Mines, Landfills, Wells above Geologic Storage
- Sensitive Receptors over Geologic Storage
- Background CO_2 Sources

The results of the site visits were presented to the Proposal Evaluation Team (Attachment 3) and members of the Alliance Technical Committee during the Richland internal workshop. The site visits confirmed the information in the proposals, identified some additional information, and were used to inform the Alliance's consideration of the best value criteria.

5.4 Best Value Criteria Review

The RFP asked site offerors to provide a narrative discussion regarding several best value criteria. These criteria relate to:

- Land Cost
- Availability/Quality of Existing Plant and Target Formation Characterization Data
- Land Ownership
- Residences or Sensitive Receptors above Target Formation
- Waste Recycling and Disposal
- Clean Air Act Compliance
- Expedited Permitting
- Transmission Interconnection
- Background CO_2 Data
- Power Sales
- Market for Hydrogen
- CO_2 Title and Indemnification
- Other Considerations

The responses provided by the site offerors to the best value criteria were summarized and compared. The Alliance Board of Directors reviewed this material and used it to develop the Candidate Site List.

6.0 CANDIDATE SITE LIST

At the outset, it must be noted that most of the proposed sites would be acceptable for a coal-fueled power plant, and many would be acceptable for geologic storage of CO_2. However, it is imperative for the success of the FutureGen project that candidate sites offer *both* (1) an acceptable location for siting a power plant, *and* (2) at least one acceptable geologic storage target formation, with a low risk to the planned schedule and budget for and mission of the project.

In addition, a primary goal of FutureGen is to build industrial and public acceptance for future near-zero emission, coal-fueled power plants of similar design characteristics. For this first plant to meet that goal, it needs to provide the broad engineering and scientific basis and understanding for building a new generation of coal-based power plants with national and international applicability and technology transferability. Thus, as noted in the RFP, the siting criteria for the FutureGen plant were far more stringent than criteria that would be used to site future, commercial, near-zero emission coal-fueled power plants. Offered sites that are not appropriate for the proposed FutureGen facility may be excellent sites for future near-zero emission, coal-fueled power plants.

The Alliance has determined that four of the eight qualified sites (1) could meet the requirements for both a power plant and geologic storage of CO_2 and (2) are capable of meeting the Alliance's need to avoid potential design, construction, regulatory, or permitting impediments that could result in schedule delay and mission failure. The Candidate Site List was developed by considering the ranking of the eight qualified sites based on the scoring criteria and applying, as appropriate, best value criteria information provided by the site offerors in their proposals.

The four sites on the Candidate Site List (in alphabetical order) are:

- Illinois – Mattoon
- Illinois – Tuscola
- Texas – Heart of Brazos
- Texas – Odessa

7.0 RATIONALE

The Alliance's rationale for identifying these four sites as the FutureGen candidate sites is as follows:

- In terms of ranking based solely on the scoring criteria, the top five of the eight qualified sites (Texas-Heart of Brazos, Illinois-Mattoon, Texas-Odessa, Illinois-Effingham, and Illinois-Tuscola) score within 5 percent of each other. These sites rank the highest for the power plant siting criteria, geologic storage criteria, and combined.

- The other three qualified sites (Illinois-Marshall, Ohio-Tuscarawas, and Kentucky) score 10-, 19- and 26-percent lower, respectively, than the top-ranked site.

- The Illinois-Marshall site achieved relatively low scores in the categories of proximity to sensitive areas; distance to transmission lines; material and fuel delivery; and ability to meet measurement, monitoring, and verification requirements.

- The Ohio-Tuscarawas County site achieved relatively low scores in the categories of proximity to sensitive areas; additional regulatory requirements; distance to transmission lines; penetrations of secondary seals for the target formation; and ability to meet measurement, monitoring, and verification requirements.

- The Kentucky site achieved relatively low scores in the categories of physical characteristics of the proposed site; proximity to sensitive areas; distance to transmission lines; target formation properties, especially the extent of the plume area and the number of wells needed to meet the injectivity target; and ability to meet measurement, monitoring, and verification requirements.

- Taking into account the best value criteria, the Alliance made the following findings with respect to the five highest-ranking sites:

  - Texas-Heart of Brazos. There are no residences above the proposed target formation, and Texas has agreed to assume title to and liability for the CO_2 produced. There is good quality data available for both surface and subsurface conditions. The net effect of the best value criteria was to strengthen the standing of this site following the initial scoring.

  - Illinois-Mattoon. The site offeror amply demonstrated the ability to obtain the necessary surface and subsurface rights in a timely manner. This includes rights-of-way needed for transmission lines and water, gas, and CO_2 pipelines. The net effect of the best value criteria was to strengthen the standing of this site following the initial scoring.

  - Texas-Odessa. The site offeror amply demonstrated the ability to obtain the surface and subsurface rights in a timely manner. This includes rights-of-way needed for transmission lines and water, gas, and CO_2 pipelines. There are no residences above the proposed target formation, and Texas has agreed to assume title to and liability for the CO_2 produced. There is good quality data available for both surface and subsurface conditions. The net effect of the best value criteria was to strengthen the standing of this site following the initial scoring.

  - Illinois-Effingham. While it was the fourth highest scoring site, this site poses substantial constructability problems given its relatively small size (270 acres) and the long, narrow configuration of the site. These problems are not accounted for in the application of the scoring criteria. Power plant siting experts believe it would be difficult to construct a rail loop for coal delivery at the Effingham site. In addition, there are two housing developments located within one mile of the power plant site (and onsite CO_2 injection wells), which raises land use

compatibility concerns, and part of the water source for the plant would be public drinking water. The net effect of the best value criteria was to weaken the standing of this site following the initial scoring.

- Illinois-Tuscola. As fifth highest scoring site, the site offeror amply demonstrated the ability to obtain surface rights in a timely manner. This includes rights-of-way needed for transmission lines and water, gas, and CO_2 pipelines. The net effect of the best value criteria was to strengthen the standing of this site following the initial scoring.

- Taking into account the best value criteria and relying on outside power plant siting and carbon sequestration/geologic storage experts, the Alliance made the following findings with respect to the lower scoring sites:

  - Illinois-Marshall. There are 69 residences and one church within one mile of the proposed site, raising land use compatibility concerns. In addition, the properties of the proposed target formation are uncertain since the nearest well is 75 miles away. The expected CO_2 plume would cross the state line into Indiana, which could pose additional underground injection permitting issues. The net effect of the best value criteria was to further weaken the standing of this site following the initial scoring.

  - Ohio-Tuscarawas County. There are a very large number of residences above the expected target formation (10,000 to 20,000).[4] In addition, it would be difficult to construct a power plant on this site given its configuration and topography. This site also poses difficulties with regard to access to water for power plant operation. Moreover, as acknowledged in the proposal, there is uncertainty whether the proposed target formation actually exists at the proposed site, which raises doubt about the reliability of the proposed injection plan. If the target formation exists and its properties are similar to what has been assumed in the proposal, then the CO_2 plume would intersect an important, privately owned historic park (Gnadenhutten Historic Park). The net effect of the best value criteria was to further weaken the standing of this site following the initial scoring.

  - Kentucky. It would be difficult to construct a power plant on this site given its relatively small size (215 acres), configuration, and topography. In addition, there are a large number of residences above the target formation (375). The site offeror proposes a primary target formation of dolomite, which raises issues concerning the continuity of reservoir properties over the very large plume area projected at the site. Using the injection scheme proposed, the injection plume would abut a major fault. Factoring in the uncertainty in the reservoir properties, there is a reasonable chance that the injected CO_2 would spill over the fault. The presence of the fault and proximity of the injection plume would necessitate a complex

[4] In comparison, the number of residences above the target formations proposed for the five top-ranked sites range from none to about 40.

characterization program at the proposed site, resulting in a high schedule/budget risk to address concerns over the impact of the injection on fault stability and leakage concerns. The shale formation identified as a secondary target is highly unusual and is likely to be unsuitable for large-scale CO_2 injection. The Alliance did note the possible availability of the Mt. Simon formation at the Kentucky site. Because the Kentucky proposal did not include a formal analysis of this sequestration option, the Alliance determined that, in fairness to all offerors, speculation regarding the efficacy of this option was not justified. The net effect of the best value criteria was to further weaken the standing of this site following the initial scoring.

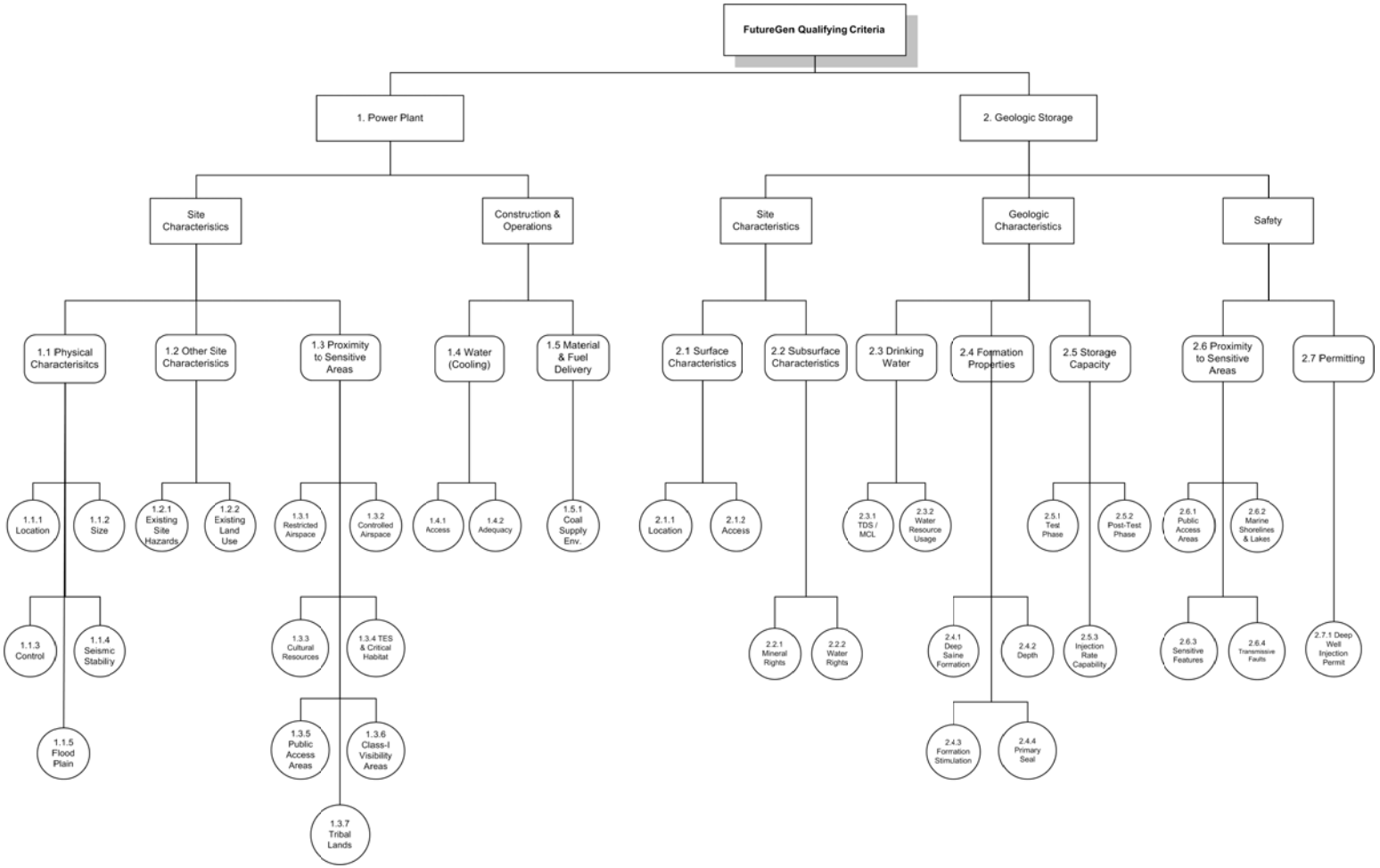
For the reasons described above, the Alliance concluded that the Illinois-Mattoon, Illinois-Tuscola, Texas-Heart of Brazos, and Texas-Odessa sites could meet the Alliance's necessary technical and environmental conditions for constructing and operating the proposed FutureGen facility within the schedule and budget prescribed in the cooperative agreement with DOE. The Alliance also concluded that the Illinois-Effingham, Illinois-Marshall, Kentucky, and Ohio-Tuscarawas County sites raise sufficient technical and environmental issues such that the sites are likely to adversely affect the goals and objectives of FutureGen and are not appropriate for the first-of-its-kind FutureGen facility.

8.0 CONCLUSION

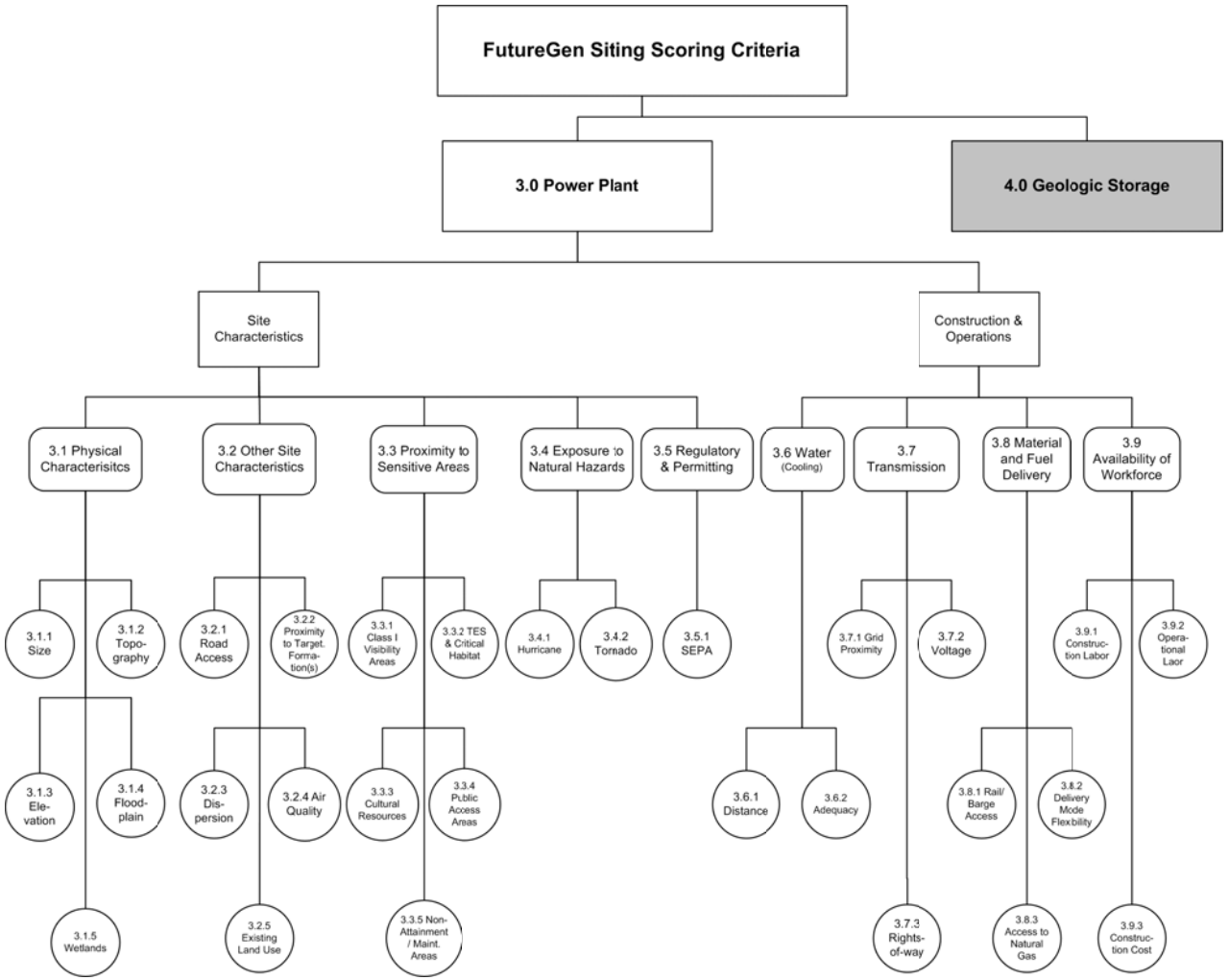
After a comprehensive siting process, the Alliance has concluded, based on the facts presented by site offerors, that four of the 12 sites proposed could be acceptable to host the proposed FutureGen facility. The siting process was based on objective criteria that focused on the goals and objectives of FutureGen. The criteria were fairly developed and applied, with participation by outside power plant siting and carbon sequestration/geologic storage experts and stakeholders. The Alliance submits these four sites to DOE for consideration in the Department's NEPA compliance process.

ATTACHMENTS

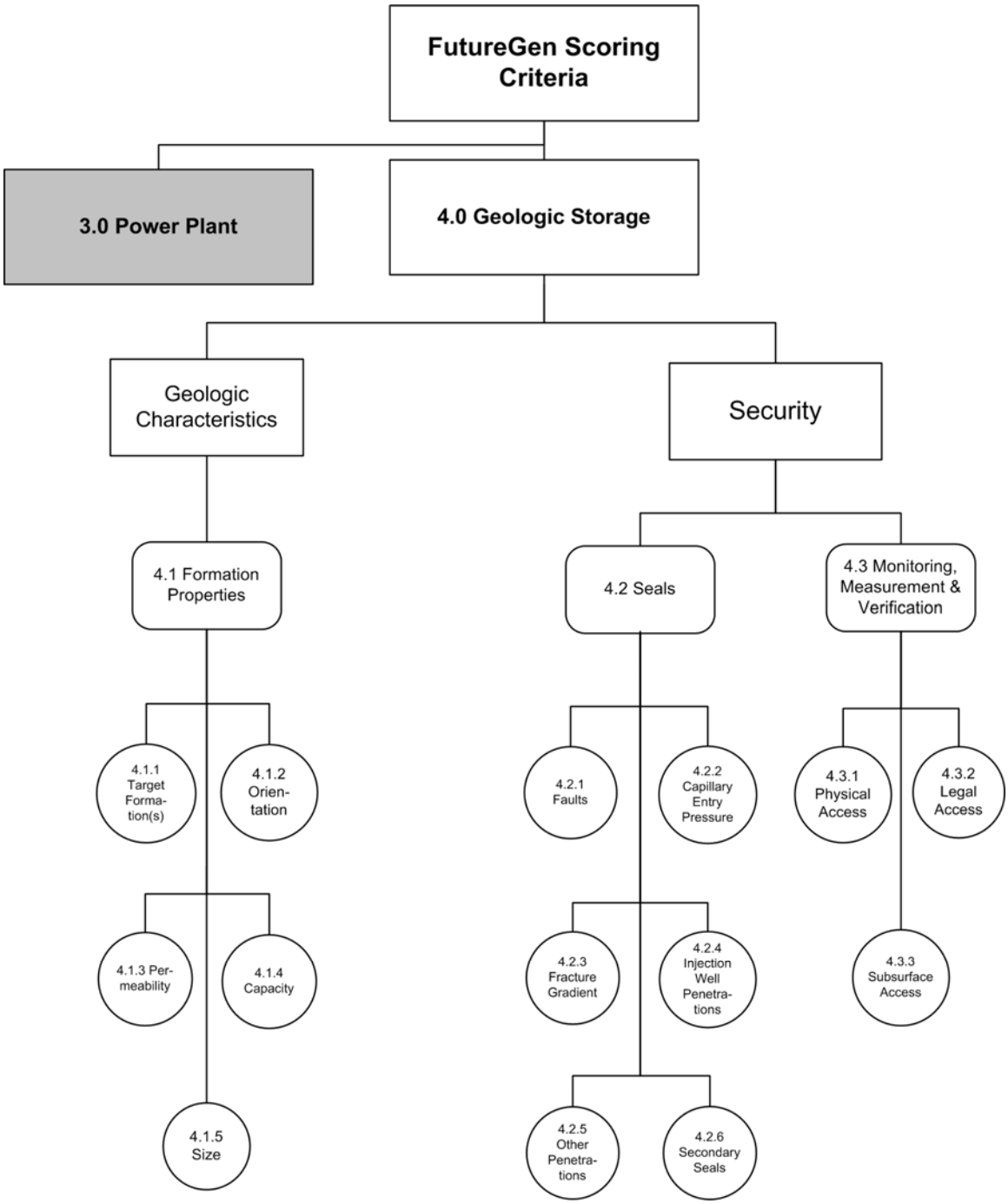
ATTACHMENT 1: QUALIFYING AND SCORING CRITERIA



Qualifying Criteria for FutureGen Facility



Scoring Criteria for FutureGen Facility Power Plant Site



Scoring Criteria for FutureGen Facility Geologic Storage

FUTUREGEN SITING CRITERIA

Table 1. Power Plant (includes transmission lines, pipelines, and transportation modes) Qualifying Criteria (RFP, Section 3, Part 1)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
1.1 Physical Characteristics					
1.1.1	Geographic Location	The proposed power plant site and the entire CO_2 target formation(s) must be located within the United States with no risk of subsurface migration of CO_2 outside the territory of the United States. The methodology for calculating plume migration is provided in Appendix B. [See also Criterion 2.1.1] *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone. *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.	This criterion was included to avoid the imposition of transboundary impacts. See also the discussion for Criterion 2.1.1.		
1.1.2	Size	The area and linear dimensions of the proposed power plant site must accommodate the FutureGen power plant and associated facilities. The proposed site must not be less than 200 contiguous acres. The Alliance has based this acreage on the area required for typical power plants, while taking into account	The minimum site size is based on typical power plant siting requirements and current conceptual design information.		

Table 1. Power Plant (includes transmission lines, pipelines, and transportation modes) Qualifying Criteria (RFP, Section 3, Part 1)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		FutureGen's need for additional space for multiple coal piles, research facilities, and carbon capture facilities. *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.			
1.1.3	Control	The offeror must provide proof that the proposed power plant site is or will be available for the proposed use. The offeror must state the nature (whether to sell, lease, or donate) and terms (including proposed cost) for the transfer of land title or leasehold rights to the Alliance for the proposed site. The offeror must also demonstrate the availability of rights-of-way for all necessary transmission line, transportation, and pipeline (water, CO_2, hydrogen, and natural gas) corridors The successful offeror must demonstrate the ability to close the real estate transfers to the Alliance within 180 days of the announcement by the Alliance of the selection. *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.	Offerors must be able to demonstrate that the site offered can be made available to the Alliance for use in the timeframe needed. Further, to control potential risk to workers and the public and facilitate future development needs, the Alliance must have ownership control over the entire area needed for the project's production facilities and right-of-way access for supporting infrastructure.		
1.1.4	Seismic Stability	The proposed power plant site must have low risk from significant seismic events. [as amended 3/24/2006] Proven by supporting geological data and calculations demonstrating peak ground acceleration less than 30 percent g, with a 2 percent chance of exceedance in 50 years, based on USGS seismic hazard	This seismic stability criterion was included to minimize cost and risk associated with construction and operation of the proposed FutureGen facility. While subsequent projects may have less stringent requirements, responsible risk management dictates		

Table 1. Power Plant (includes transmission lines, pipelines, and transportation modes) Qualifying Criteria (RFP, Section 3, Part 1)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		data. *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.	that the first commercial-scale carbon capture and storage project in the country be sited in an area with a low seismic risk. The use of peak ground acceleration as the criterion measure is the most appropriate seismic hazard because injection wellheads, CO_2 pipeline infrastructure, and other shallow subsurface facilities associated with the FutureGen plant would be most affected by direct effects of fault offset or extreme ground motions.		
1.1.5	Floodplain	The proposed power plant site must have low potential for flood damage and plant shutdown. At least 100 contiguous acres of the proposed power plant site must be above the 100-year floodplain. *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.	Avoidance of construction within a floodplain is consistent with the intent of Executive Order 11988 and DOE Floodplain regulations at 10 CFR 1022.		
1.2 Other Site Characteristics					
1.2.1	Existing Site Hazards	The site proposed for the facility, whether a greenfield or brownfield site, must be free of hazardous or radioactive chemicals and materials and free of wastes requiring special handling, treatment, and/or disposal. Specifically, the proposed site must not currently be on the National Priorities List established under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). For any proposed site that has been remediated pursuant to CERCLA, the degree of cleanup must satisfy the requirements in Section 121(d) of CERCLA	Construction and operations on a contaminated site presents unacceptable risk to workers and the public and unacceptable financial liability to FutureGen, unless such contamination is within acceptable limits determined by a formal assessment under RCRA or CERCLA.		

Table 1. Power Plant (includes transmission lines, pipelines, and transportation modes) Qualifying Criteria (RFP, Section 3, Part 1)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		[42 U.S. Code (USC) § 9621(d)]. For any proposed site that has been remediated pursuant to state law, the degree of cleanup obtained must assure protection of human health and the environment. Such assurance is assumed if the degree of cleanup satisfies Section 121(d) of CERCLA. No hazardous wastes identified or listed pursuant to Section 3001 of the Resource Conservation and Recovery Act (RCRA) (42 USC § 6921) may be currently generated, treated, or stored at the proposed site. The proposed site may not currently be subject to regulation by the Nuclear Regulatory Commission (NRC) or by an NRC Agreement State operating pursuant to Section 274 of the Atomic Energy Act. The offeror must certify that it is not aware of any unremediated hazardous wastes identified or listed pursuant to Section 3001 of RCRA that have been disposed of at the proposed power plant site. *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.			
1.2.2	Existing Land Use	Current use, if any, on the proposed power plant site and surrounding existing land use must be consistent with the construction and operation of the FutureGen facility. If zoning regulations apply to the proposed plant site, the site must be zoned heavy industrial/industrial; alternatively, the offeror must demonstrate that the area could be zoned or rezoned for heavy industrial/industrial use in a timeframe consistent with Alliance and	Construction and operation of the facilities at the power plant site would be incompatible with non-industrial uses such as residential areas. Attempting to site a power plant in or near a residential area would create scheduling and cost risks that the Alliance wants to avoid.		

Table 1. Power Plant (includes transmission lines, pipelines, and transportation modes) Qualifying Criteria (RFP, Section 3, Part 1)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		project schedule. *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.			
1.3 Proximity to Sensitive Areas					
1.3.1	Restricted Air Space	The proposed power plant site must be compatible with existing military restricted use airspace. *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.	Facility height (stack) and access via helicopter must not be affected by military air space restrictions.		
1.3.2	Controlled Air Space	Assuming a 250-foot maximum height for a startup and test phase stack, the proposed power plant site must be compatible with existing and projected protected airspace of affected airports. *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.	Facility height (stack) must not interfere with any nearby protected air space.		
1.3.3	Cultural Resources	The portion of the proposed power plant site that would be physically disturbed must be free of structures that are listed on, or eligible for listing on, the National Register of Historic Places, and be free of known cultural or archeological resources, including Traditional Cultural Properties. *Proposed power plant site* means the minimum	Minimizing or avoiding environmental impacts is a major mission of the FutureGen project. In addition, avoidance of such protected resources provides the least risk to project cost and schedule.		

Table 1. Power Plant (includes transmission lines, pipelines, and transportation modes) Qualifying Criteria (RFP, Section 3, Part 1)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.			
1.3.4	Threatened and Endangered Species (TES) and Critical Habitat	The portion of the proposed power plant site to be disturbed must be free of known federally-listed TES and critical habitat for TES (excluding migratory birds). *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.	Minimizing or avoiding environmental impacts is a major mission of the FutureGen project. In addition, avoidance of such protected resources provides the least risk to project cost and schedule.		
1.3.5	Proximity to Public Access Areas	The proposed power plant site must be located outside of and not adjacent to the boundaries of any PAA. *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone. *Public access area* (PAA) means a state park or national park or preserve, national monument, national seashore, national lakeshore, national wildlife refuge, designated wilderness area, designated wild and scenic river, or study area for any of the preceding designations.	Minimizing or avoiding environmental impacts is a major mission of the FutureGen project. In addition, avoidance of such areas provides the least risk to project cost and schedule.		
1.3.6	Proximity to Class I Visibility Areas	The proposed power plant site must be located at least 60 miles (100 kilometers) beyond the boundaries of any Mandatory Class I Visibility Area. *Proposed power plant site* means the minimum	Minimizing or avoiding environmental impacts is a major mission of the FutureGen project. In addition, avoidance of such protected resources provides the least risk to project cost and schedule.		

Table 1. Power Plant (includes transmission lines, pipelines, and transportation modes) Qualifying Criteria (RFP, Section 3, Part 1)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.			
1.3.7	Proximity to Tribal Lands	A proposed power plant site located on or adjacent to tribal lands must be supported by the affected Native American tribe(s). *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.	Minimizing or avoiding environmental impacts is a major mission of the FutureGen project. In addition, avoidance of such protected resources provides the least risk to project cost and schedule.		
1.4 Cooling Water					
1.4.1	Access to Cooling Water	To avoid disruption to plant operations, the proposed power plant site must have access to reliable supplies of industrial water at minimum sustainable flow rates. Industrial water for the power plant must be available at a sustainable flow rate of not less than 2500 gallons per minute (gpm) 24 hours a day year-round. This quantity of water is based on water requirements at existing integrated gasification combined-cycle coal-fueled power plants. The offeror must provide evidence of sustainable flow rates as indicated above, which will depend on the source of the water supply. If surface water usage is anticipated from lakes or streams with allocated surface water rights or permits, the proposal must so state and provide proof of an unencumbered right to withdraw water at the minimum sustainable flow rates identified above. If groundwater usage is proposed in a state with allocated groundwater rights, the proposal must so state and provide proof of an unencumbered right to draw water at the minimum sustainable flow	This criterion is based on typical power plant siting requirements and represents the minimum cooling water requirements for the current conceptual design.		

Table 1. Power Plant (includes transmission lines, pipelines, and transportation modes) Qualifying Criteria (RFP, Section 3, Part 1)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		rates identified above. *Proposed power plant site* means the minimum 200-acre area needed for the coal-fueled power plant, associated processing facilities, fuel storage, on-site disposal (if available), and a buffer zone.			
1.4.2	Adequacy under Low Flow Conditions	For the water source identified in Criterion 1.4.1, the offeror must provide evidence that the source is capable of supplying plant make-up requirements of 2500 gpm under low flow conditions.	Minimum water requirements must be met even under the lowest anticipated flows of the water source, or the FutureGen facility would not be able to operate during low flow events.		
1.5 Material and Fuel Delivery					
1.5.1	Coal Supply Environment	In order for the FutureGen facility to fulfill its programmatic goals, including reliability, it needs to be capable of operating with more than one major coal rank. Therefore, it is required that more than one major coal rank be able to be delivered to the proposed plant site by more than one transportation mode, at competitive prices.	Project research and development, and reliability goals demand this diversity of fuel and transportation sources.		Evaluation team will have to review submittal collectively. No single dollar value possible for "competitive price"

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
2.1 Surface Characteristics					
2.1.1	Location	The proposed geologic formation(s) must be located within the United States with no risk of subsurface migration of CO_2 outside the territory of the United States. Based on the professional judgment of technical experts, the Alliance believes that a 50-MMT CO_2 plume would have a very low probability of migrating up to 10 miles (16 kilometers) from the bottomhole of an injection well. Because FutureGen is a first-of-a-kind demonstration project and because monitoring wells may need to be placed at the maximum extent of the expected plume, the Alliance believes that an injection well should be no closer than 20 miles (32 kilometers) from a U.S. border as a conservative safe distance. The methodology for calculating plume migration is provided in Appendix B. [See also Criterion 1.1.1]	The U.S. is a signatory of the United Nations Espoo Treaty, Convention on Environmental Impact Assessment in a Transboundary Context. The General Provisions of this treaty stipulate that "The Parties shall, either individually or jointly, take all appropriate and effective measures to prevent, reduce and control significant adverse transboundary environmental impact from proposed activities." Scoping calculations with conservative reservoir parameters indicate a low probability of having a 50 MMT CO_2 plume extend out 10 miles from an injection well. An additional safety factor doubling this distance to 20 miles was selected to virtually eliminate any possibility of a trans-U.S. border migration of a subsurface CO_2 plume. Hence, this criterion ensures compliance with the General Provisions of the treaty and prevents triggering of additional provisions and requirements associated with Transboundary Environmental Impact Assessments that would significantly delay the project and increase costs.		
2.1.2	Access	While ownership of the land above the projected subsurface CO_2 plume is not required, the Alliance must have sufficient access to the land surface above the proposed target formation(s) to implement a rigorous monitoring program. At least 60 percent of the	Surface access is a prerequisite to being able to install surface and subsurface monitoring equipment. A *de minimus* standard was selected to require access to the majority of the land surface around above the target formation(s).		

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		land above the proposed target formation(s) must be physically accessible for installation of surface and subsurface monitoring equipment. *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.	The so-called "60 percent rule" is an often used standard for decision-making.		
2.2 Subsurface Site Characteristics					
2.2.1	Mineral Rights	The offeror must own or have a demonstrated ability to obtain, purchase, or obtain a waiver of subsurface mineral rights within and immediately adjacent to proposed target formation(s) to accommodate an injection capacity of 50 MMT of CO_2. The requirement applies to mineral rights within all target formations and immediately above the shallowest primary seal, as well as to mineral rights below the target formations if mineral resources below cannot be reasonably or securely accessed without disrupting the integrity of the target formation and the primary seal. *Target formation* means a geologic formation	Mineral rights disputes at a geologic storage site could require years of litigation to resolve and be very costly to the Alliance. Transfer or waiver of these rights is considered essential to maintaining cost and schedule targets for the project.		

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.			
2.2.2	Water Rights	The offeror must own or have a demonstrated ability to obtain, purchase, or obtain a waiver of subsurface water rights within and immediately adjacent to the proposed target formation(s) to accommodate the injection of 50 MMT CO_2. The requirement applies to water rights within all target formations and immediately above the shallowest primary seal, as well as to water rights below the target formations if water resources below cannot be reasonably or securely accessed without disrupting the integrity of the target formation and the primary seal. *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations	Water rights disputes at a geologic storage site could require years of litigation to resolve and be very costly to the Alliance. Transfer or waiver of these rights is considered essential to maintaining cost and schedule targets for the project.		

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.			
2.3 Drinking Water					
2.3.1	Total Dissolved Solids or Maximum Concentration Levels	Proposed target formation(s) must not be an underground source of drinking water. *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation. *Underground source of drinking water* means an aquifer, or its portion, which (1) serves as a source of drinking water for human consumption, or (2) contains both (a) a sufficient quantity of water to supply a public water system, and (b) fewer than 10,000 milligrams per liter of total dissolved solids or constituents that do not exceed maximum concentration limits specified by the U.S. Environmental Protection Agency (EPA) in	Compliance with federal USDW regulations will be required to obtain a permit for CO_2 injection.		

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		National Primary Drinking Water Regulations (40 CFR 141.62).			
2.3.2	Water Resource Usage	The broad definition of an underground source of drinking water was mandated by Congress to ensure that future underground sources of drinking water would be protected, even where those aquifers are not currently being utilized as a drinking water source or could not be used without some form of water treatment. Evidence must be provided that the proposed target formation(s) is not a potential source of drinking water. In addition, identify water resources listed by the local water board that will be used to meet local water usage needs for the next 10 years. *Underground source of drinking water* means an aquifer, or its portion, which (1) serves as a source of drinking water for human consumption, or (2) contains both (a) a sufficient quantity of water to supply a public water system, and (b) fewer than 10,000 milligrams per liter of total dissolved solids or constituents that do not exceed maximum concentration limits specified by the U.S. Environmental Protection Agency (EPA) in National Primary Drinking Water Regulations (40 CFR 141.62). *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline	Water resources are an important issue, especially in the Western U.S. This criterion provides protection for potentially valuable future water resources given an expected plant lifetime of 30 years or more.		

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.			
2.4 Formation Properties					
2.4.1	Deep Saline Reservoir	At least one proposed target formation must be a geologically distinct deep saline formation suitable for CO_2 injection. Provide evidence that at least one proposed target formation is a deep saline formation capable of meeting at least 60 percent of the injectivity and capacity requirements given in Criteria 2.4.2 through 2.5.3. *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.	Deep saline formations represent the largest and most pervasive storage capacity for CO_2 in the U.S. and worldwide. A key goal of the FutureGen project is to conduct research on CO_2 geologic storage that has a broad potential impact on deployment of near zero emission power plants in the future. To accomplish this goal, the majority of the CO_2 captured from the plant must be injected into a deep saline formation.		
2.4.2	Depth	CO_2 is a supercritical fluid at temperatures above 31°C and a pressure of approximately	The rationale for this criterion is included in the text.		

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		73 atm. To help ensure consistent physical properties for the CO_2 in the proposed target formation, and to facilitate modeling of the CO_2 injection and dispersal within the target formation, the primary deep saline formation must have in situ hydrostatic pressure and temperature conditions above the CO_2 critical point *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.			
2.4.3	Formation Stimulation	The proposed primary deep saline formation must have sufficient storage capacity to meet the project goals without dependence on large-scale physical or chemical stimulation techniques.	Physical stimulation techniques typically include hydraulic fracturing methods in low-permeability reservoirs. These methods physically fracture the host formation and a proppant is injected to maintain the fractures and spread the fractures further away from the well. Because containment of CO_2 in a typical deep saline formation requires the presence and maintenance of a low-permeability caprock, imposition of high stresses that could induce fracturing in		

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
			the caprock is highly undesirable. Large-scale chemical stimulation methods, such as matrix acidizing, may link large vertical fractures and are undesirable from a cost perspective and from their unknown long-term impacts on hydraulic properties of the reservoir and caprock.		
2.4.4	Primary Seal	The proposed target formation(s) must have a primary seal (caprock) capable of long-term containment of the injected CO_2. A primary seal must have sufficient thickness (greater than 20 feet [6 meters]), be regionally extensive, and be continuous over the entire projected CO_2 plume boundary after injection of 50 MMT of CO_2. It also must have sufficiently low vertical permeability and have sufficiently high capillary entry pressure to provide a barrier to the migration of CO_2 out of the target formation. *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.	A primary seal is required for each target formation to contain the injected CO_2 from rapidly migrating to surface and defeating the purpose of the geologic storage program.		Evaluators must document the basis for their conclusions
2.5 Storage Capacity					

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
2.5.1	Storage Capacity During Test Phase	FutureGen project goals call for injecting a minimum of 1 MMT CO_2 per year over the project Test Phase, which consists of the first four years after startup.	Sufficient pore space must be available in the target formations to accommodate the FutureGen storage goals. Because the first four years of the project are a critical test phase, the geological properties of the geologic storage site must support the ability to meet the total capacity goal. The best means of lowering the risk of using incorrect geological data to qualify a site is to require the geological data to come from locations near the proposed site. *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.		
2.5.2	Storage Capacity Post-Test Phase	Power plants have a typical operating life of at least 30 years. The FutureGen facility will be designed and constructed in a manner that allows operation for this timeframe. Should CO_2 capture and storage continue past the Test Phase, storage capacity for at least 50 MMT is	Sufficient pore space must be available in the target formations to accommodate the FutureGen goals over the balance of the plant life. However, because of the much larger volume of CO_2 involved, the expectation of some lateral reservoir		

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		required to meet this objective.	heterogeneity, and unknowns regarding continuation of the geologic storage program after the test phase, less stringent and more regional geological evidence of formation properties is required for this criterion. *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.		
2.5.3	Injection Rate Capacity	In addition to the required total storage capacity of the site (see Criteria 2.5.1 and 2.5.2), the proposed target formation(s) also must support a CO_2 injection rate goal of 1 MMT of CO_2 per year for up to 30 years. *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more	Sufficient permeability across all proposed target formations at a site must be available to meet FutureGen goals. Consistent with prior *de minimus* criteria, the primary deep saline formation is required to safely accept a minimum injection rate representing 60% of the injectivity goal or 0.6 MMT/yr.		

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.			
2.6 Safety and Security					
2.6.1	Public Access Areas	The land above the proposed target formation(s) must not be on a PAA. The bottomhole location of any injection well must be no closer than 10 miles (16 kilometers) from any PAA. Based on the professional judgment of technical experts, the Alliance believes that a 50-MMT CO_2 plume would have a very low probability of migrating up to 10 miles (16 kilometers) from the bottomhole of an injection well. Because this is a first-of-a-kind demonstration project, 10 miles was chosen as a conservative safe distance. *Public access area* (PAA) means a state park or national park or preserve, national monument, national seashore, national lakeshore, national wildlife refuge, designated wilderness area, designated wild and scenic river, or study area for any of the preceding designations. *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline	Access to the land surface above the CO_2 plume is required for installation of monitoring equipment, which may be very difficult on a PAA. In addition, the Alliance wishes to minimize adverse environmental impacts and the chance of delays in the project schedule to address concerns regarding real or perceived impacts from CO_2 migration into a PAA. Scoping calculations with conservative reservoir parameters indicate a low probability of having a 50 MMT CO_2 plume extend out 10 miles from an injection well.		

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.			
2.6.2	Marine Shorelines and Lakes	The proposed target formation(s) must not intersect marine shorelines or other major surface bodies of water. The bottomhole location of any injection well must be no closer than 10 miles (16 kilometers) to marine shorelines and major surface water bodies. Based on the professional judgment of technical experts, the Alliance believes that a 50-MMT CO_2 plume would have a very low probability of migrating up to 10 miles (16 kilometers) from the bottomhole of an injection well. Because this is a first-of-a-kind demonstration project, 10 miles was chosen as a conservative safe distance. *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in	The Alliance wishes to minimize adverse environmental impacts and the chance of delays in the project schedule to address concerns or litigation regarding real or perceived impacts from CO_2 migration into a shoreline or major lake. The definition of a major lake, >20 sq. mi. or depth >150 ft was chosen to only exclude sites proximal to about 10% of the largest or deepest U.S. lakes.		

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.			
2.6.3	Sensitive Features	The land above the proposed target formation(s) must not intersect large dams, water reservoirs, hazardous materials storage facilities, Class 1 injection wells, or other sensitive features. The bottomhole location of any injection well must be no closer than 10 miles (16 kilometers) to any sensitive feature. Based on the professional judgment of technical experts, the Alliance believes that a 50-MMT CO_2 plume would have a very low probability of migrating up to 10 miles (16 kilometers) from the bottomhole of an injection well. Because this is a first-of-a-kind demonstration project, 10 miles was chosen as a conservative safe distance. [as amended 3/20/2006] *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.	The Alliance wishes to minimize adverse environmental impacts and the chance of delays in the project schedule to address concerns or litigation regarding real or perceived impacts from CO_2 migration into one of these sensitive features. The definition of a large dam was taken from references defined by the International Commission on Large Dams (ICOLD). *Sensitive feature* means a large dam, water reservoir, hazardous materials storage facility, or Class 1 injection well.		

Table 2. Geologic Storage Qualifying Criteria (RFP, Section 3, Part 2)					
Criteria Code	**Description**	**Qualifying Criteria**	**Rationale for Criteria**	**Evaluation Criterion Fulfilled Yes or No**	**Notes (cite proposal page(s) with supporting information; if *not* met, provide rationale)**
		Large dam means any dam of 15 meters (50 feet) or more in height or a dam greater than 5 meters (16 feet) high and having a reservoir volume of more than 3 million cubic meters (4 million cubic yards).			
2.6.4	Relation of Primary Seal to Active or Transmissive Faults	The primary seal must not be intersected by any known historically active or hydraulically transmissive faults.	Active or transmissive faults provide an unacceptable risk of CO_2 leakage out of the target formation and a potential rapid pathway to the surface. Such known geologic structures must be avoided. *Target formation* means a geologic formation capable of storing CO_2 at the rates and capacities specified in this RFP (see Criteria 2.5.1, 2.5.2, and 2.5.3). Offerors must propose at least one primary deep saline formation and may propose one or more additional target formations of any type. Total injection rate and capacity for target formations in use at one time must equal or exceed 1 MMT of CO_2 storage per year, and the total storage capacity of all target formations in aggregate must equal or exceed 50 MMT of CO_2. Requested information must be provided for each proposed target formation.		Evaluators must document the basis for their conclusions
2.7 Permitting					
2.7.1	Deep Well UIC Permits	The offeror must have a demonstrated ability to obtain applicable UIC permits for at least one million tons of CO_2 per year for at least four years.	Obtaining a UIC permit is a prerequisite to conducting any deep underground injection of CO_2. Evidence is needed that state regulators do not have any objections in principle to large-scale CO_2 injections at the proposed site.		

Table 3. Power Plant (includes transmission lines, pipelines, and transportation modes) Scoring Criteria (RFP, Section 3, Part 3)							
Criteria Code	**Description**	**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
3.1 Physical Characteristics							
3.1.1	Size	This criterion addresses the availability of additional acreage at the proposed power plant site to support future expandability of the facility. Larger sites are preferred.	5 - Over 600 acres available		5	0	
			4 - >500 to 600 acres available				
			3 - >400 to 500 acres available				
			2 - >300 to 400 acres available				
			1 - 200 to 300 acres available				
3.1.2	Topography	This criterion address how much groundwork will be required at the site before it is suitably graded for facility construction. Flat sites requiring little or no grading are preferred.	5 - 0.5% to 1% slope and < 100,000 cy fill		1	0	
			4 - >1% to 2% slope or 100,000 to 300,000 cy fill				
			3 - >2% to 3% slope or 300,000 to 600,000 cy fill				
			2 - >3% to 4% slope or 600,000 to 1,000,000 cy fill				
			1 - >4% to 5% slope or > 1,000,000 cy fill				
3.1.3	Elevation	The performance efficiency of the power plant is lower at high altitudes. It is therefore desirable to locate the facility at an elevation less than 5000 feet (1520 meters) above sea level.	5 – No more than 5,000 feet above sea level		1	0	
			1 – More than 5,000 feet above sea level				
3.1.4	Floodplains	It is preferable that as much of the proposed power plant site as possible be located above the 100- and 500-year floodplains, in order to maximize safety and	5 - Entire site above 500-year floodplain		5	0	
			3 - Entire site above 100-year floodplain				

Table 3. Power Plant (includes transmission lines, pipelines, and transportation modes) Scoring Criteria (RFP, Section 3, Part 3)							
Criteria Code	**Description**	**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
		flexibility in locating critical plant facilities.	1 - Only critical project elements above 100-year floodplain				
3.1.5	Wetlands	It is preferable that adverse impacts to wetlands be avoided as much as possible.	5 - No wetlands affected		5	0	
			4 - Less than 1 acre of wetlands affected				
			3 - >1 to 5 acres of wetlands affected				
			2 - >5 to 10 acres of wetlands affected				
			1 - More than 10 acres of wetlands affected				
			Subtotal	0	17	0	
3.2 Other Site Characteristics							
3.2.1	Road Access	It is preferable that improved roads providing access to the proposed power plant site are as close to the site boundary as possible. Sites with improved roads closest to the site will score more highly.	5 - Site is served by an existing improved road		5	0	
			3 - Site is between 0 to 5 miles from an improved road				
			1 - Site is > 5 miles away from an improved road or proponent will build				
3.2.2	Proximity to Proposed Target Formation	While it is not necessary for the target formation to immediately underlie the proposed site for the FutureGen facility, it should be close to the proposed power plant site in order to facilitate construction of pipelines. It is preferable for cost and construction considerations for	5 – Geologic storage site is beneath proposed plant site		10	0	
			4 – Geologic storage site is within 2 miles of proposed plant site				
			3 – Geologic storage site >2 but =< 5 miles of proposed plant site				

Table 3. Power Plant (includes transmission lines, pipelines, and transportation modes) Scoring Criteria (RFP, Section 3, Part 3)							
Criteria Code	**Description**	**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
		the proposed power plant site and the proposed target formation to be as close as possible.	2 – Geologic storage site >5 but =<10 miles of proposed plant site				
			1 – Geologic storage site is > 10 miles from the proposed plant site				
3.2.3	Air Dispersion	Any air emissions from the facility will disperse more readily under favorable terrain conditions. The difference in terrain elevation within 1 mile (1.6 kilometers) of the power plant site will be compared to an assumed stack height of 250 feet (76 meters). This comparison will serve as a proxy for air dispersion modeling during this stage of the site selection process.	5 - Highest terrain elevation less than 50% of stack height (<125ft)		5	0	
			4 - Highest terrain elevation 50% to 100% of stack height (125-250ft)				
			3 - Highest terrain elevation 101% to 200% of stack height (251-500ft)				
			2 - Highest terrain elevation 201% to 300% of stack height (501-750ft)				
			1 - Highest terrain elevation more than 300% of stack height (>750ft)				
3.2.4	Air Quality	The existing air quality at the site is a key determinant of the ease and ability to obtain the necessary air quality permits.	5 - Highest amount of NAAQS consumed is less than 45%		5	0	
			3 - Highest amount of NAAQS consumed is 45% to 90%				
			1 - Highest amount of NAAQS consumed is more than 90%				

Table 3. Power Plant (includes transmission lines, pipelines, and transportation modes) Scoring Criteria (RFP, Section 3, Part 3)							
Criteria Code	**Description**	**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
3.2.5	Existing Land Use	It is preferable to have the FutureGen facility located on a site where it will be consistent with surrounding land uses.	5 - Highly compatible: Brownfield, heavy industry, or mineral extraction		5	0	
			3 - Somewhat compatible: Agriculture or forestry				
			1 - Incompatible: Recreational, institutional, or residential				
			Subtotal	0	30	0	
3.3 Proximity to Sensitive Areas							
3.3.1	Class I Visibility Areas	It is preferable to locate the FutureGen facility as far as possible from the boundaries of any Mandatory Class I Visibility Area.	5 - Nearest Class I area more than 300 km from site (186mi)		10	0	
			4 - Nearest Class I area >250 to 300 km from site (155-184mi)				
			3 - Nearest Class I area >200 to 250 km from site (124-154mi)				
			2 - Nearest Class I area >150 to 200 km from site (93-123mi)				
			1 - Nearest Class I area >100 km but less than 150 km from site (>62 to <93mi)				
3.3.2	TES and Critical Habitat	It is preferable to have no documented TES or critical habitat on any part of the proposed plant site or in any transmission, transportation, or pipeline corridor.	5 - Nearest documented occurrence more than 1 mile away		5	0	
			3 - Nearest documented occurrence up to 1 mile away				
			1 - Nearest documented occurrence potentially on undisturbed portion of site				

Table 3. Power Plant (includes transmission lines, pipelines, and transportation modes) Scoring Criteria (RFP, Section 3, Part 3)							
Criteria Code	**Description**	**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
3.3.3	Cultural Resources	It is preferable that the documented occurrence of cultural, historical, or archaeological resources or Traditional Cultural Properties be such as to allow maximum flexibility in locating various parts of the facility at the proposed site.	5 - No known resources or properties within 1 mile of the plant site, transmission, pipeline, or transportation corridors		1	0	
			3 - Resources or properties on the plant site, transmission, pipeline, or transportation corridors, but not impacted				
			1 - Resources or properties on the plant site, transmission, pipeline, or transportation corridors, impacted, and not mitigated				
3.3.4	Public Access Areas	It is preferable to locate the FutureGen facility as far as possible from the boundaries of designated PAAs.	5 - Nearest PAA more than 20 miles from site		1	0	
			4 - Nearest PAA >10 to 20 miles from site				
			3 - Nearest PAA >5 to 10 miles from site				
			2 - Nearest PAA >1 to 5 miles from site				
			1 - Nearest PAA less than 1 mile from site				
3.3.5	Non-Attainment / Maintenance Areas	It is preferable to locate the FutureGen facility as far as possible from any EPA-designated non-attainment or maintenance areas.	5 - Nearest non-attainment area more than 50 miles from site		10	0	
			4 - Nearest non-attainment area >20 to 50 miles from site				
			3 - Nearest non-attainment area >10 to 20 miles from site				

Table 3. Power Plant (includes transmission lines, pipelines, and transportation modes) Scoring Criteria (RFP, Section 3, Part 3)							
Criteria Code	**Description**	**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
			2 - Nearest non-attainment area less than 10 miles from site				
			1 - Site in non-attainment area				
			Subtotal	0	27	0	
3.4 Exposure to Natural Hazards							
3.4.1	Hurricanes	The proposed power plant site should not pose an undue risk of damage to the FutureGen facility due to hurricanes. Sites with lower hurricane risk are more favorable than those with higher risk.	5 - Site not located in a coastal county (Atlantic and Gulf coasts only, defined by US Landfalling Hurricane Project) [less than 60mph]		1	0	
			3 - Site located in a coastal county, north of North Carolina (Atlantic and Gulf coasts only, defined by US Landfalling Hurricane Project)				
			1 - Site located in a coastal county, south of Virginia (Atlantic and Gulf coasts only, defined by US Landfalling Hurricane Project) 100MPH				
3.4.2	Tornadoes	The proposed power plant site should not pose an undue risk of damage to the FutureGen facility due to tornadoes. Sites with lower tornado risk are more favorable than those with higher risk.	5 - Site located in FEMA-defined area with < 1 recorded tornado per 1,000 square miles		1	0	
			4 - Site located in FEMA-defined area with 1 to 5 recorded tornadoes per 1,000 square miles				
			3 - Site located in FEMA-defined area with 6 to 10 recorded tornadoes per 1,000 square miles				

Table 3. Power Plant (includes transmission lines, pipelines, and transportation modes) Scoring Criteria (RFP, Section 3, Part 3)							
Criteria Code	**Description**	**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
			2 - Site located in FEMA-defined area with 11 to 15 recorded tornadoes per 1,000 square miles				
			1 - Site located in FEMA-defined area with more than 15 recorded tornadoes per 1,000 square miles				
			Subtotal	0	2	0	
3.5. Regulatory and Permitting							
3.5.1	State Environmental Policy Act (SEPA)	The imposition of any requirements of SEPA (where applicable) on the construction and operation of the FutureGen facility can impact project and/or schedule.	5 - No SEPA requirements or the ability to adopt the Federal NEPA document as adequate without delays		10	0	
			3 - SEPA requirements, but directed to be done concurrently with the NEPA doc				
			1 - SEPA requirements to be done independently or after the NEPA doc				
			Subtotal	0	10	0	
3.6 Cooling Water							
3.6.1	Distance to Water Source	It is preferable to have the identified source for the cooling water be as close the site as possible.	5 - Water source less than 1 mile		5	0	
			4 - Water source >1 to 5 miles				
			3 - Water source >5 to 10 miles				
			2 - Water source >10 to 15 miles				
			1 - Water source more than 15 miles				

Table 3. Power Plant (includes transmission lines, pipelines, and transportation modes) Scoring Criteria (RFP, Section 3, Part 3)							
Criteria Code	**Description**	**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
3.6.2	Volume of Water Available	Flexibility in meeting cooling water requirements is desirable. It is preferable that water be available in excess of the minimum 2500 gpm [Criterion 1.4.2]. [as amended 3/20/2006]	5 – More than amount needed (2500 gpm) for wet cooling within 15 miles		10	0	
			1 – Only enough for wet cooling (2500 gpm) within 15 miles				
			Subtotal	0	15	0	
3.7 Transmission							
3.7.1	Grid Proximity	It is preferable for the transmission grid to be as close as possible to the proposed power plant site in order to minimize line construction efforts and right-of-way issues.	5 - Nearest suitable transmission connection point less than 1 mile		5	0	
			4 – Nearest suitable transmission connection point 1 to 5 miles				
			3 - Nearest suitable transmission connection point >5 to 10 miles				
			2 - Nearest suitable transmission connection point >10 to 15 miles				
			1 - Nearest suitable transmission connection point is >15 miles				
3.7.2	Voltage	It is preferable to be able to connect to higher voltage transmission lines.	5 – 500 kV or higher line within 15 miles		5	0	
			4 – 345 kV line within 15 miles or 500 kV or higher line within 25 miles				
			3 – 230 kV line within 15 miles or 345kV within 25 miles				

Table 3. Power Plant (includes transmission lines, pipelines, and transportation modes) Scoring Criteria (RFP, Section 3, Part 3)							
Criteria Code	**Description**	**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
			2 – 115 to138 kV line within 15 miles, or 230kV within 25 miles				
			1 – No line within 15 miles				
3.7.3	Rights-of-Way	In addition to identifying a suitable connection point and transmission line, offerors must also address the siting and construction of new power transmission lines.	5 – Offeror has or can obtain transmission line rights-of-way		10	0	
			4 – Offeror has or can obtain rights-of-way to access up to 75% of proposed transmission line rights-of-way				
			3 – Offeror has or can obtain rights-of-way to access up to 50% of proposed transmission line rights-of-way				
			2 – Offeror has or can obtain rights-of-way to access up to 25% of proposed transmission line rights-of-way				
			1 – Offeror cannot demonstrate the ability to obtain transmission line rights-of-way				
			Subtotal	0	20	0	
3.8 Material and Fuel Delivery							
3.8.1	Distance to Rail and/or Barge Delivery	Rail or barge delivery is generally the most economical mode of delivery for fuels and materials to the site.	5 - Nearest suitable railroad or barge delivery less than 1 mile		5	0	
			4 - Nearest suitable railroad or barge delivery 1 to 5 miles				
			3 - Nearest suitable railroad or barge delivery >5 to 15 miles				
			2 - Nearest suitable railroad or barge delivery >15 to 25 miles				

Table 3. Power Plant (includes transmission lines, pipelines, and transportation modes) Scoring Criteria (RFP, Section 3, Part 3)							
Criteria Code	**Description**	**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
			1 - Nearest suitable railroad or barge delivery is >25 miles				
3.8.2	Delivery Mode Flexibility	Sites with access to competing fuel transporters are preferable to sites without such access.	5 - Two rail options and barge/vessel and truck		10	0	
			3 - One rail option and barge/vessel and truck				
			1 - One rail option or barge/vessel option and truck				
3.8.3	Access to Natural Gas Pipeline	The coal-gasification facilities to be utilized by the FutureGen plant require natural gas as a start-up fuel. Based on the nominal capacity of the FutureGen facility, a minimum of 500 standard cubic feet per minute (SCFM) at 450 pounds per square inch (psi) of natural gas from a natural gas pipeline will be required. Up to 30,000 SCFM at 450 psi may be desirable. In order to minimize the costs and rights-of-way issues with construction of a natural gas pipeline, proximity to an existing pipeline is preferable (If 30,000 available note for Best Value).	5 - Nearest 500SCFM gas pipeline less than 1 mile		5	0	
			4 - Nearest 500SCFM gas pipeline 1 to 5 miles				
			3 - Nearest gas pipeline >5 to 15 miles				
			2 - Nearest 500SCFM gas pipeline >15 to 25 miles				
			1 - Nearest 500SCFM gas pipeline is >25 miles				
			Subtotal	0	20	0	
3.9 Availability of Workforce							
3.9.1	Construction Labor Availability	Sites must have access to an adequate supply of construction labor, which is generally more readily available in high-population areas. Defined as distance from the proposed	5 – Within 100 miles		5	0	

Table 3. Power Plant (includes transmission lines, pipelines, and transportation modes) Scoring Criteria (RFP, Section 3, Part 3)							
Criteria Code	**Description**	**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
		power plant site to the nearest population center of at least 20,000 people	3 – >100 but Within 200 miles				
			1 – .Over 200 miles				
3.9.2	Operational Labor Availability	Operations labor generally requires a more specialized skill set and can be more readily found in higher-population areas.Defined as distance from the proposed power plant site to the nearest population center of at least 50,000 people	5 – Within 50 miles		5	0	
			4 – >50 but within 100 miles				
			3 – >100 but within 150 miles				
			2 – >150 but within 200 miles				
			1 – Over 200 miles				
3.9.3	Construction Cost	Sites with lower construction costs are preferred.Using the relative cost of heavy construction projects in the area, as compared to the RSMeans U.S. 30-city average.	5-Cost location factor for nearest city is less than 80% of the 30-city average		5	0	
			4-Cost location factor for nearest city is 80% to 90% of the 30-city average				
			3-Cost location factor for nearest city is >90% to 110% of the 30-city average				
			2-Cost location factor for nearest city is >110% to 120% of the 30-city average				
			1-Cost location factor for nearest city is more than 120% of the 30-city average				
			Subtotal	0	15	0	
			Total	0	156	0	

Table 4. Geologic Storage Scoring Criteria (RFP, Section 3, Part 4)							
Criteria Code		**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
4.1 Formation Properties							
4.1.1	Proposed Target Formations	The Alliance requires the existence of at least one deep saline formation capable of storing a minimum of 60 percent of the total injection target of 50 MMT of CO_2. The Alliance will assign higher scores to sites with a diversity of geologic target formations with differing potential trapping mechanisms than to sites with fewer geologically distinct storage target formations. To be viable an additional proposed target formation must support at least 25 percent of the capacity and injectivity targets described in Criteria 2.5.1 through 2.5.3.	5 – Two or more deep saline formations and three or more other formation types 4- Two or more deep saline formations and two other formation types 3- Two or more deep saline formations and one other formation type 2 – One deep saline formation and one or more other formation type 1 – One deep saline formation		10	0	
4.1.2	Orientation	The distribution and migration of CO_2 in the primary deep saline formation are greatly influenced by the structural dip of the formation strata. Except for anticlinal closures, the Alliance will assign higher scores to sites with lower average structural dip, unless sufficient evidence is provided of a structural or stratigraphic trapping mechanism that would prevent up-dip migration of the CO_2. Dips less than 5 (five) degrees will be classified as “lower” dips.	5 – Dip of strata =< 2° 3 – 2° < Dip < 6 1 - Dip of strata >= 6°		5	0	
4.1.3	Permeability	The magnitude and spatial variability of target formation permeability greatly influence injectivity of CO_2, associated	5 - Average matrix permeability to gas => 100 mD		5	0	

Table 4. Geologic Storage Scoring Criteria (RFP, Section 3, Part 4)							
Criteria Code		**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
		bottomhole well pressure required to meet the injection rate target of 1 MMT per year, and residual CO_2 saturations. The Alliance will assign higher scores to sites with thick target formation intervals characterized by good matrix permeabilities in the primary deep saline formation than to sites characterized by low permeabilities (less than 20 millidarcies [mD]). Additional consideration will be given (under Best Value) to sites that have moderate matrix permeabilities but are representative of a large percentage of the potential deep saline formations in the United States.	3 – Average matrix permeability to gas >20 mD to < 100 mD 1 - Average matrix permeability to gas =< 20 mD				
4.1.4	Capacity	Over the lifetime of the FutureGen plant, it is possible that over 100 MMT of CO_2 may be captured and potentially stored. Consequently, the Alliance will assign higher scores to sites that provide supporting hydrogeological data and calculations documenting CO_2 storage capability greater than the 50 MMT minimum required under the Qualifying Criteria (Criterion 2.5.2).	5 - Total capacity >=200 MMT 3 - Total capacity >100 MMT but < 200 MMT 1 – Total capacity = or > 50 MMT but ≤ 100 MMT		5	0	
4.1.5	Plume Size	For a variety of reasons associated with cost, access, liability, and schedule, the Alliance will assign higher scores for target formations with hydrogeological characteristics that	5 - Plume area <= 50 km² (19mi²) 3 – Plume area >50 km^2 but ≤ 100 km² (19-39mi²)		5	0	

Table 4. Geologic Storage Scoring Criteria (RFP, Section 3, Part 4)							
Criteria Code		**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
		result in a smaller overall land surface footprint above the proposed formation(s) than to those with characteristics that require a larger footprint to meet the injectivity and capacity goals set by the Alliance.	1 - Plume area > 100 km² (>-39mi²)				
			Subtotal	0	30	0	
4.2 Seals							
4.2.1	Faults	The Alliance will evaluate the offeror's summary of faults and fracture zones affecting the injection field and will assign higher scores to sites with a low risk of fault-induced failure of CO_2 containment.	5 - Zero faults or major fracture zones intersecting primary seals		10	0	
			3 – One to three faults or major fracture zones intersecting primary seals				
			1 - Four or more faults or major fracture zones intersecting primary seals				
4.2.2	Capillary Entry Pressure	To prevent permeation of CO_2 through a primary seal, injection pressures required to meet the 1 MMT CO_2 per year injection rate target must remain below the capillary entry pressure of the overlying primary caprock seal. The Alliance will assign higher scores to injection fields having a seal with a larger ratio of capillary entry pressure versus peak bottomhole pressure required to meet the injectivity target.	5 - Capillary entry pressure > 100X the expected bottomhole pressure in each proposed geologic storage site		10	0	
			3 – Pcap >10X but $\leq$ 100X				
			1 - Capillary entry pressure $\leq$10X the expected bottomhole pressure in each proposed geologic storage site				
4.2.3	Fracture Gradient	Rupture of the primary overlying seal	5 - Ratio > 50		10	0	

Table 4. Geologic Storage Scoring Criteria (RFP, Section 3, Part 4)							
Criteria Code		**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
		through injection-related overpressure is one of the primary risks in CO_2 leakage. Proposed sites that demonstrate low differential in situ caprock or target formation stress and high mechanical seal strength relative to injection pressure will be ranked higher by the Alliance.	3 – Ratio >5 to $\leq$ 50 1 - Ratio $\leq$5				
4.2.4	Injection Well Penetrations	The Alliance will assign higher scores to proposed sites that require fewer penetrations of the primary seals by injection wells to meet injectivity targets.	5 - Total number of wells $\leq$ 5 3 – Total Wells >5 to 10 1 - Total number of wells > 10		5	0	
4.2.5	Other Penetrations	Proposed sites that have fewer penetrations of the primary seals by active or abandoned non-project wells are considered to have lower risk of CO_2 leakage and will require less well characterization and remediation activity. The Alliance will assign higher scores to such sites.	5 - No wells 3 – Penetrations 1 to $\leq$ 10 1 - Total number of wells > 10		5	0	
4.2.6	Secondary Seals	Secondary seals provide additional backup containment of the CO_2 should an unlikely failure of the primary seal occur during or after CO_2 injection. Consequently, the Alliance will assign higher scores to sites that provide evidence of secondary seals. To be considered, secondary seals must: overlie the primary caprock seal(s), be largely continuous, be greater than 10 feet (3 meters) thick throughout, and cover at least 75 percent of the projected plume after injection of 50 MMT CO_2.	5 - Three or more secondary seals 3 – One to two secondary seals		5	0	

Table 4. Geologic Storage Scoring Criteria (RFP, Section 3, Part 4)							
Criteria Code		**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
			1 - Zero secondary seals				
			Subtotal	0	45	0	
4.3 Monitoring, Mitigation, and Verification							
4.3.1	Physical Access	While ownership of the land above the CO_2 plume is not required, the Alliance prefers sites that have unrestricted access to the land surface above the proposed target formation(s) to implement a rigorous monitoring program. The comprehensive monitoring program will likely include installation of monitoring wells in strategic locations around the site in addition to atmospheric and shallow subsurface monitoring stations. The Alliance will assign higher scores to sites where more than 60 percent of the land above the proposed target formation(s) is physically accessible for the installation of surface and subsurface monitoring equipment.	5 - Ratio >90% accessible 3 – >70% to ≤ 90% accessible 1 – =>60% to =< 70% accessible		10	0	
4.3.2	Legal Access	The Alliance will assign higher scores to sites whose landowners will allow periodic access to portions of their property for monitoring, mitigation, and verification activities for at least 15 years following the startup of the FutureGen facility.	5 – >90% accessible 3 – >70% to ≤ 90% accessible 1 – => 60% to =< 70% accessible		10	0	
4.3.3	Subsurface Access	Installation of monitoring well facilities requires not only landowner permission but appropriate geological conditions for drilling, well completion,	5 - 0% to 10% restrictions above geologic storage sites that would prohibit monitoring well installation		10	0	

Table 4. Geologic Storage Scoring Criteria (RFP, Section 3, Part 4)							
Criteria Code		**Scoring Criteria**	**Scales**	**Score**	**Weight**	**Evaluation (score X weight)**	**Notes (cite proposal page(s) with supporting information)**
		and instrument installation. Sites that are well suited for monitoring well installation will receive higher scores than sites where monitoring well installation is less physically or economically achievable.	3 - . Isolated areas (>10% to 30% restrictions) where monitoring well installation is not likely or not possible				
			1 - Significant areas (>30%) of subsurface above geologic storage site may be off limits for monitoring well installation, or no information on subsurface accessibility				
			Subtotal	0	30	0	
			Total	0	105	0	

ATTACHMENT 2: SUMMARIES OF SCORING CRITERIA RESULTS

Power Plant Scoring Criteria

Criteria Code	Evaluation (Score x Weight)							
	TX-Brazos	IL-Mattoon	IL-Eff	IL-Tuscola	TX-Odessa	IL-Marshall	OH-Tusc.	KY
3.1 Physical								
3.1.1 Size	10	5	5	5	20	10	25	5
3.1.2 Topography	5	5	5	5	5	5	1	2
3.1.3 Elevation	5	5	5	5	5	5	5	5
3.1.4 Floodplains	25	25	25	25	25	25	25	5
3.1.5 Wetlands	25	15	15	15	25	15	10	10
Subtotal	**70**	**55**	**55**	**55**	**80**	**60**	**66**	**27**
3.2 Other Chr								
3.2.1 Road Access	25	25	25	25	25	25	25	15
3.2.2 Proximity to Proposed Target Formation	10	50	50	10	10	30	30	40
3.2.3 Air Dispersion	25	25	25	25	25	25	15	20
3.2.4 Air Quality	25	25	25	25	25	25	25	25
3.2.5 Existing Land Use	25	15	5	25	25	15	15	25
Subtotal	**110**	**140**	**130**	**110**	**110**	**120**	**110**	**125**
3.3 Sensitive Areas								
3.3.1 Class I Visibility Areas	50	50	40	50	20	40	30	10
3.3.2 TES and Critical Habitat	25	25	25	25	25	25	25	25
3.3.3 Cultural Resources	5	5	5	5	5	5	3	5
3.3.4 Public Access Areas	4	4	4	4	4	2	4	4
3.3.5 Non-Attainment / Maintenance Areas	50	40	40	40	50	20	40	20
Subtotal	**134**	**124**	**114**	**124**	**104**	**92**	**102**	**64**
3.4 Natural Hazards								
3.4.1 Hurricanes	5	5	5	5	5	5	5	5
3.4.2 Tornadoes	4	3	3	3	5	3	4	4
Subtotal	**9**	**8**	**8**	**8**	**10**	**8**	**9**	**9**
3.5 Regulatory								
3.5.1 State Environmental Policy Act (SEPA)	50	50	50	50	50	50	30	50
Subtotal	**50**	**50**	**50**	**50**	**50**	**50**	**30**	**50**
3.6 Cooling Water								
3.6.1 Distance to Water Source	25	10	20	20	5	15	25	25
3.6.2 Volume of Water Available	50	50	50	50	50	50	50	50
Subtotal	**75**	**60**	**70**	**70**	**55**	**65**	**75**	**75**
3.7 Transmission								
3.7.1 Grid Proximity	25	20	15	20	20	10	20	15
3.7.2 Voltage	20	10	20	20	20	20	10	10
3.7.3 Rights-of-Way	50	50	50	50	50	50	40	10
Subtotal	**95**	**80**	**85**	**90**	**90**	**80**	**70**	**35**

Power Plant Scoring Criteria

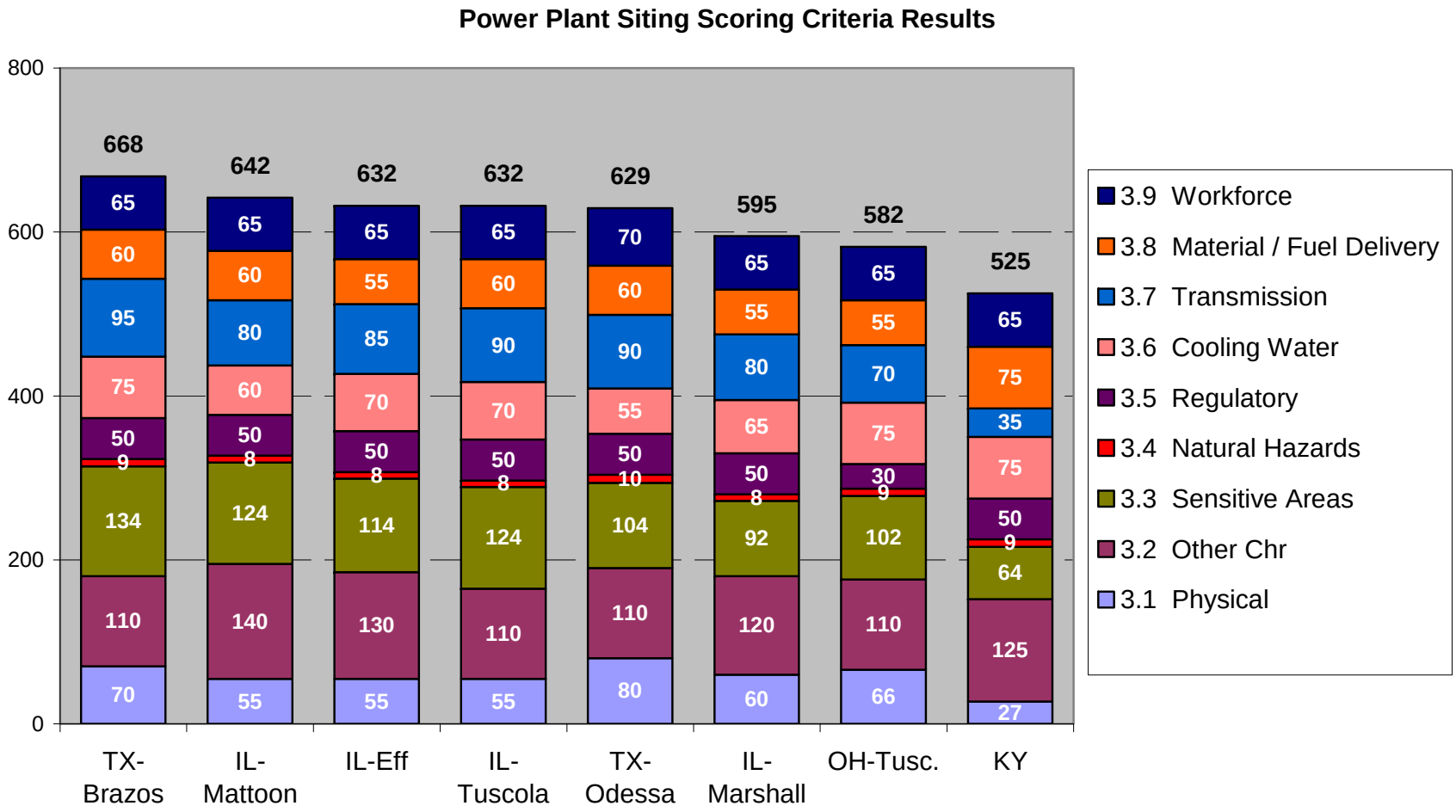
Criteria Code	Evaluation (Score x Weight)							
	TX-Brazos	IL-Mattoon	IL-Eff	IL-Tuscola	TX-Odessa	IL-Marshall	OH-Tusc.	KY
3.8 Material / Fuel Delivery								
3.8.1 Distance to Rail and/or Barge Delivery	25	25	25	25	25	25	25	25
3.8.2 Delivery Mode Flexibility	10	10	10	10	10	10	10	30
3.8.3 Access to Natural Gas Pipeline	25	25	20	25	25	20	20	20
Subtotal	**60**	**60**	**55**	**60**	**60**	**55**	**55**	**75**
3.9 Workforce								
3.9.1 Construction Labor Availability	25	25	25	25	25	25	25	25
3.9.2 Operational Labor Availability	20	25	25	25	25	25	25	25
3.9.3 Construction Cost	20	15	15	15	20	15	15	15
Subtotal	**65**	**65**	**65**	**65**	**70**	**65**	**65**	**65**
Grand Total	**668**	**642**	**632**	**632**	**629**	**595**	**582**	**525**

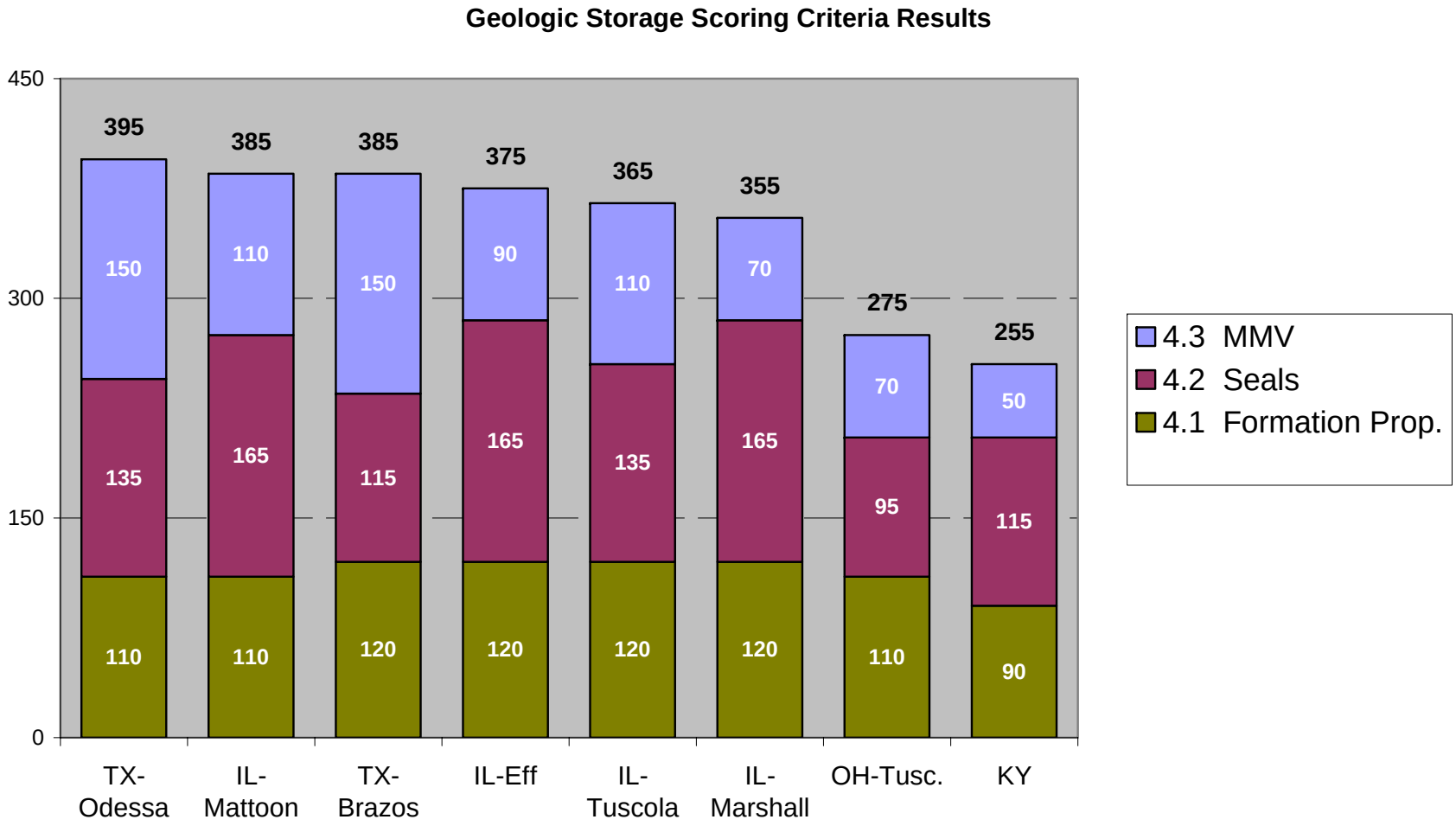
Geologic Storage Scoring Criteria

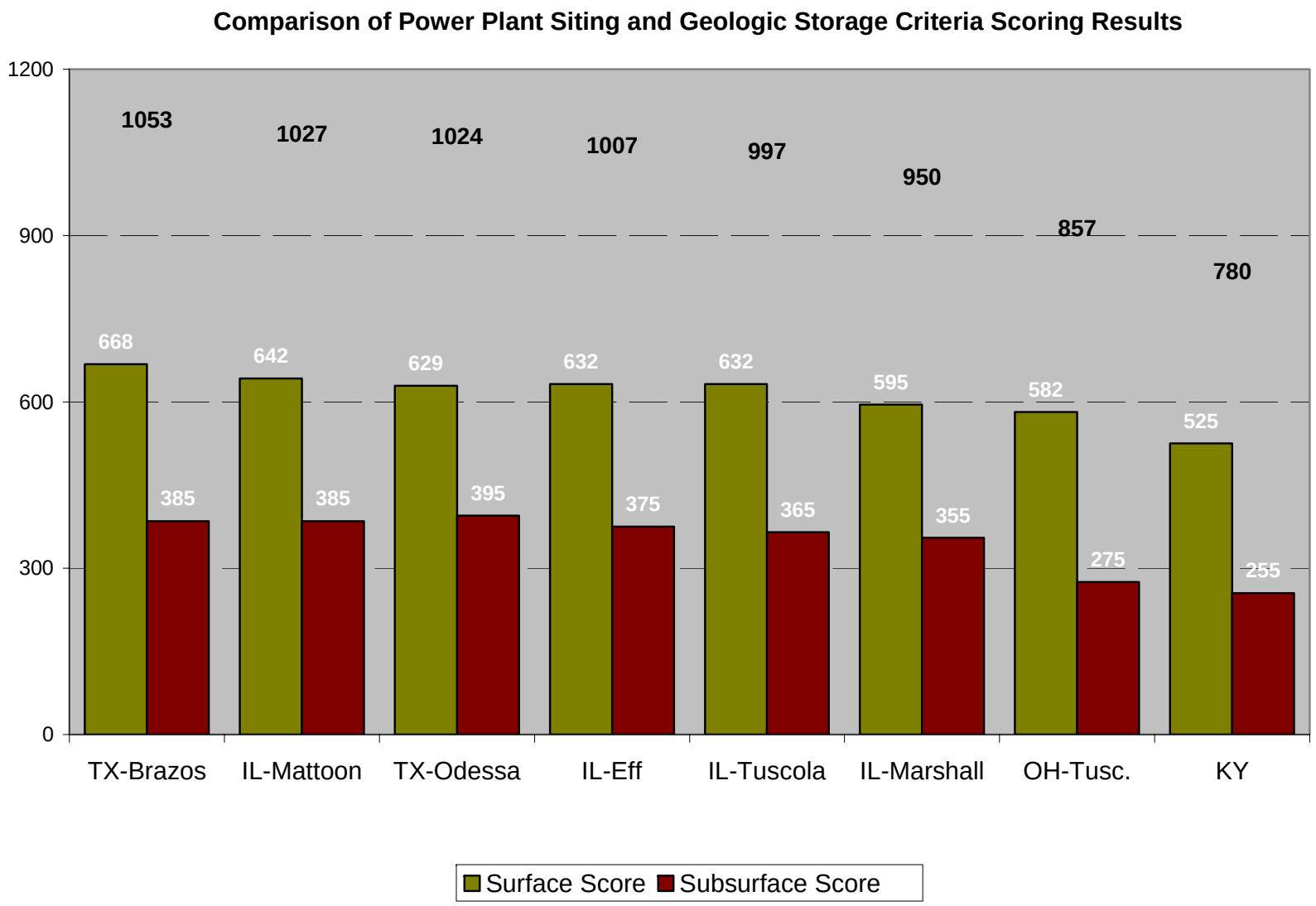
Criteria Code	Evaluation (Score x Weight)							
	TX-Odessa	IL-Mattoon	TX-Brazos	IL-Eff	IL-Tuscola	IL-Marshall	OH-Tusc.	KY
4.1 Formation Prop.								
4.1.1 Proposed Target Formations	40	20	40	20	20	20	40	40
4.1.2 Orientation	25	15	25	25	25	25	25	25
4.1.3 Permeability	5	25	15	25	25	25	15	15
4.1.4 Capacity	15	25	15	25	25	25	15	5
4.1.5 Plume Size	25	25	25	25	25	25	15	5
Subtotal	**110**	**110**	**120**	**120**	**120**	**120**	**110**	**90**
4.2 Seals								
4.2.1 Faults	50	50	30	50	30	50	50	30
4.2.2 Capillary Entry Pressure	30	10	30	10	10	10	10	10
4.2.3 Fracture Gradient	10	30	10	30	30	30	10	10
4.2.4 Injection Well Penetrations	15	25	25	25	25	25	5	15
4.2.5 Other Penetrations	15	25	5	25	25	25	5	25
4.2.6 Secondary Seals	15	25	15	25	15	25	15	25
Subtotal	**135**	**165**	**115**	**165**	**135**	**165**	**95**	**115**
4.3 MMV								
4.3.1 Physical Access	50	50	50	30	50	10	10	10
4.3.2 Legal Access	50	10	50	10	10	10	10	10
4.3.3 Subsurface Access	50	50	50	50	50	50	50	30
Subtotal	**150**	**110**	**150**	**90**	**110**	**70**	**70**	**50**
Grand Total	**395**	**385**	**385**	**375**	**365**	**355**	**275**	**255**

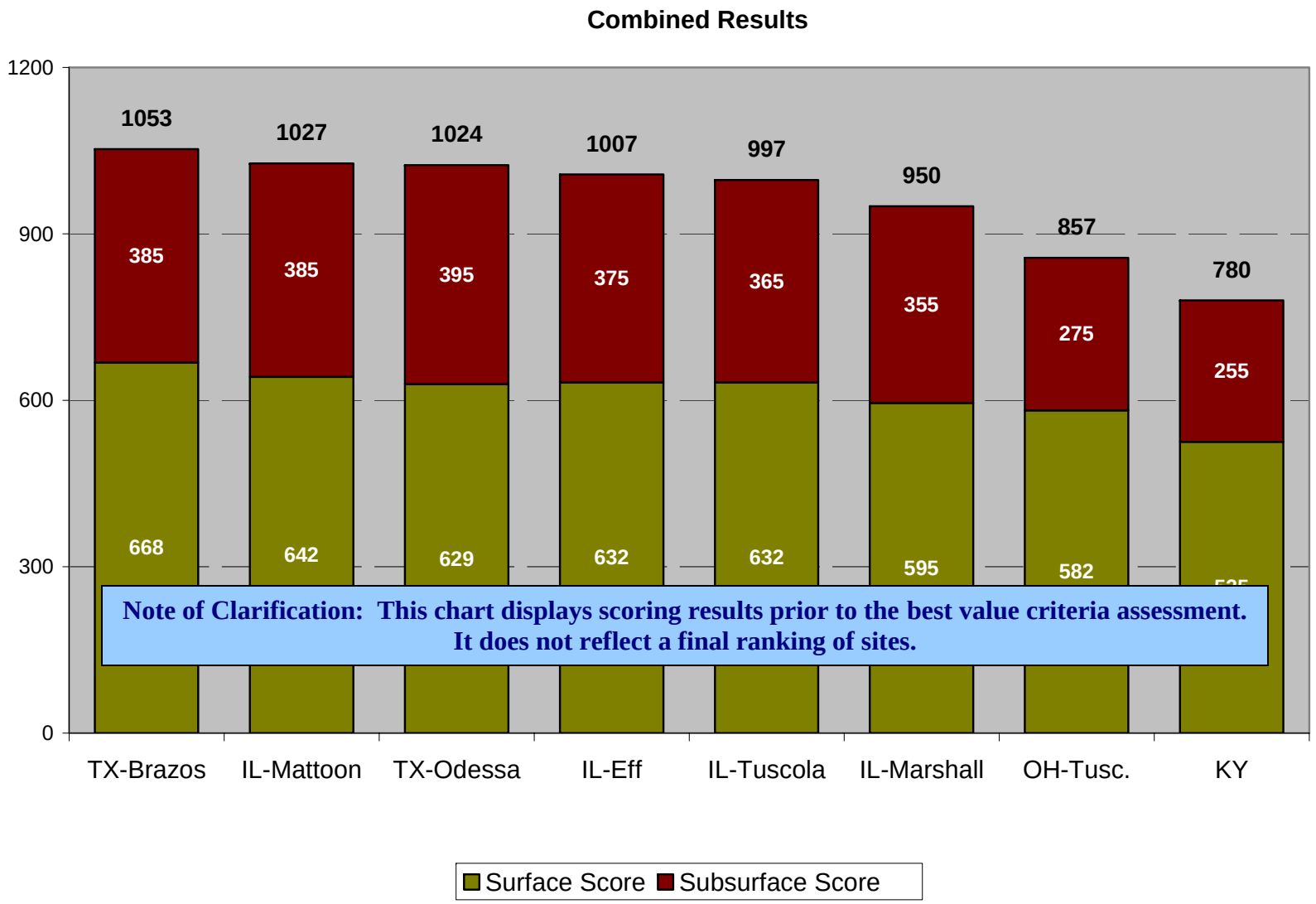
Power Plant and Geologic Storage Scoring Criteria Combined Scores

Criteria Code	Evaluation (Score x Weight)							
	TX-Brazos	IL-Mattoon	TX-Odessa	IL-Eff	IL-Tuscola	IL-Marshall	OH-Tusc.	KY
Surface Score	668	642	629	632	632	595	582	525
Subsurface Score	385	385	395	375	365	355	275	255
Grand Total	**1053**	**1027**	**1024**	**1007**	**997**	**950**	**857**	**780**


Power Plant Siting Scoring Criteria Results
800
600
400
200
0
668
642
632
632
629
595
582
525
65
60
95
75
50
9
134
110
70
65
60
80
60
50
8
124
140
55
65
55
85
70
50
8
114
130
55
65
60
90
70
50
8
124
110
55
70
60
90
55
50
10
104
110
80
65
55
80
65
50
8
92
120
60
65
55
70
75
30
9
102
110
66
65
75
35
75
50
9
64
125
27
TX-Brazos
IL-Mattoon
IL-Eff
IL-Tuscola
TX-Odessa
IL-Marshall
OH-Tusc.
KY
3.9 Workforce
3.8 Material / Fuel Delivery
3.7 Transmission
3.6 Cooling Water
3.5 Regulatory
3.4 Natural Hazards
3.3 Sensitive Areas
3.2 Other Chr
3.1 Physical


Geologic Storage Scoring Criteria Results
450
300
150
0
395
385
385
375
365
355
275
255
150
110
150
90
110
70
70
50
135
165
115
165
135
165
95
115
110
110
120
120
120
120
110
90
TX-Odessa
IL-Mattoon
TX-Brazos
IL-Eff
IL-Tuscola
IL-Marshall
OH-Tusc.
KY
4.3 MMV
4.2 Seals
4.1 Formation Prop.


Comparison of Power Plant Siting and Geologic Storage Criteria Scoring Results
1200
900
600
300
0
1053
1027
1024
1007
997
950
857
780
668
642
629
632
632
595
582
525
385
385
395
375
365
355
275
255
TX-Brazos
IL-Mattoon
TX-Odessa
IL-Eff
IL-Tuscola
IL-Marshall
OH-Tusc.
KY
Surface Score
Subsurface Score


Combined Results
1200
900
600
300
0
1053
1027
1024
1007
997
950
857
780
385
385
395
375
365
355
275
255
668
642
629
632
632
595
582
Note of Clarification: This chart displays scoring results prior to the best value criteria assessment. It does not reflect a final ranking of sites.
TX-Brazos
IL-Mattoon
TX-Odessa
IL-Eff
IL-Tuscola
IL-Marshall
OH-Tusc.
KY
Surface Score
Subsurface Score

ATTACHMENT 3: ALLIANCE PROPOSAL EVALUATION TEAM MEMBERS

The Alliance selected Battelle, a non-profit scientific organization, to support the development of the Candidate Site List. At the Alliance's direction, Battelle enlisted Sargent & Lundy to provide support for the power plant criteria proposal evaluations and site visits. Battelle also enlisted the support of three members of the Alliance's External Subsurface Technical Experts Group (TEG) to provide support for the geologic storage criteria proposal evaluations.

Alliance Proposal Evaluation Team

- *Lucinda Low Swartz, Siting Team Lead (Battelle) (Kensington, MD)*
  J.D., Washington College of Law, The American University
  B.A. University of California, Riverside (Political Science and Administrative Studies, joint major)
  25 years of experience in environmental law and regulation, specializing in NEPA.

- *Thomas L. Anderson, Power Plant Evaluation Team Lead (Battelle) (Buena Vista, CO)*
  B.S., Botany, Ohio State University
  Continuing education courses in Project Management and Regulatory Compliance
  32 years of experience in the development of NEPA documents.

- *Natesan Mahasenan, Power Plant Evaluation Team Member (Battelle)(Richland, WA)*
  M.S. Engineering & Public Policy, Carnegie Mellon University
  M.S. Mechanical Engineering, Tulane University
  B.Eng. (Honors) Mechanical Engineering, Birla Inst. of Technology & Science (India).
  10 years of experience in energy and environmental policy, risk and decision analysis.

- *Steven Richard Bertheau, Power Plant Evaluation Team Member (Sargent & Lundy) (Chicago, IL)*
  B.S., Civil Engineering, Michigan State University
  25 years of experience in power plant engineering and design.

- *Timothy P. Krause, Power Plant Evaluation Team Member (Sargent & Lundy) (Chicago, IL)*
  M.S., Environmental Biology, Western Illinois University
  B.S., Zoology, Michigan State University
  32 years of experience in power plant environmental permitting and compliance.

- *Dilip H. Bhatt, Power Plant Evaluation Team Member (Sargent & Lundy) (Chicago, IL)*
  M.S., Civil Engineering, Illinois Institute of Technology
  B.S., Civil Engineering, Gujarat University - India
  30 years of experience in power plant engineering and design.

- *B. Pete McGrail, Geologic Storage Evaluation Team Lead (Battelle) (Richland, WA)*
  Ph.D., Environmental Engineering, Columbia Southern University
  M.S., Nuclear Engineering, University of Missouri
  B.S., Nuclear Engineering, University of Missouri
  Laboratory Fellow with 23+ years of experience in performance assessment of subsurface disposal systems and research programs that adapt waste-related technologies to solve problems in environmental science and natural resource recovery. Serves as Battelle's Science and Technology lead for geologic sequestration projects that currently include managing a field demonstration project for the Big Sky Regional Carbon Partnership and basic science studies being conducted under the Zero Emissions Research and Technology Center.

- *Christopher J. Murray, Geologic Storage Evaluation Team Member (Battelle) (Richland, WA)*
  Ph.D., Stanford University (Geostatistics, Dept. of Applied Earth Sciences)
  M.Sc., University of Montana (Geology)
  B.A., University of Montana (Geology)
  24 years of experience in petroleum geology, environmental geology, and geostatistics.

- *E. Charlotte Sullivan, Geologic Storage Evaluation Team Member (Battelle) (Richland, WA)*
  Ph.D., Geology, University of Houston
  M.S., Geology, University of Arkansas
  B.S., Geology Arkansas Tech University
  25+ years of experience in domestic and international hydrocarbon-related geology and geophysical research, exploration, development, and enhanced oil recovery (EOR).

- *Sally Benson, Geologic Storage Evaluation Team Member (Lawrence Berkeley National Laboratory, TEG) (Berkeley, CA)*
  Ph.D., Mineral Engineering, University of California, Berkeley
  M.S., Materials Science, University of California, Berkeley
  B.A., Geology, Columbia University
  18 years of research in groundwater hydrology and in reservoir engineering studies of environmental remediation, gas storage, geothermal energy production, and carbon sequestration. Served as Lawrence Berkeley National Laboratory (LBNL) Division Director for Earth Sciences and as a member of numerous environmental and earth sciences councils and boards.

- *Lee H. Spangler, Geologic Storage Evaluation Team Member (Montana State University, TEG) (Bozeman, Montana)*
  Postdoctoral Studies, Los Alamos National Laboratory
  Ph.D., Physical Chemistry, University of Pittsburgh
  B.A., Physical Chemistry, Washington & Jefferson College
  19 years of research experience in physical chemistry and molecular spectroscopy. Director of Special Programs in the Research Office at Montana State University and director of the Zero Emissions Research and Technology Center, a collaborative involving four DOE laboratories and two academic institutions.

- *Peter Cook, Geologic Storage Evaluation Team Member (Cooperative Research Centre for Greenhouse Gas Technologies, TEG) (Canberra, Australia)*
  Ph.D., University of Colorado
  MSc, Australian National University
  BSc, DSc, Durhan University
  Research geologist with 25+ years of experience in international resource and environmental studies, with an emphasis on hydrocarbons and carbon capture and storage. Dr. Cook has served as a leader in carbon sequestration and as a consultant on resource and environmental management and policy issues in Australia, Finland, Greece, Japan, Netherlands, and Portugal.

- *William E. Fallon, Site Visit Lead (Battelle) (Gaithersburg, MD)*
  Ph.D., Natural Product Chemistry, University of Rhode Island
  B.A., Biology, St. Michael's College, Vermont
  28 years of experience in major federal environmental programs.

- *Daniel L. Marmer, Site Visit Team Member (Sargent & Lundy) (Chicago, IL)*
  B.S., Nuclear Engineering, University of Illinois at Champaign
  13 years of experience in the energy and environmental fields.

- *James T. Perry, Site Visit Team Member (Sargent & Lundy) (Chicago, IL)*
  Professional Masters in Construction Management, Illinois Institute of Technology
  B.S. Civil Engineering, University of Arkansas
  7 years of experience in civil engineering.